The background of the cover is a vibrant orange. It features several line drawings of children engaged in various learning activities. At the top left, a child is shown from the side, looking at an open book. In the top center, a child is using scissors to cut a piece of paper. To the top right, there is a drawing of a telescope on a tripod. On the right side, a child is using a magnifying glass to examine something. In the bottom right, a group of three children are standing and looking towards the center. At the bottom center, there is a stack of several books. On the bottom left, a child is standing and looking up, with a large ruler placed vertically next to them. The title 'LEARNING THROUGH PROJECTS' is written in large, bold, blue letters with a slight 3D effect, and 'A HANDBOOK' is written in smaller, plain black letters below it.

# LEARNING THROUGH PROJECTS

A HANDBOOK

Mirambika Free Progress School  
The Mother's International School

## Mirambika

Mirambika is a Research Center for Integral Education and Human Values in India's capital, New Delhi. It was instituted in 1981 in response to a wide-felt need for teachers' training in Integral Education. Four wings of education make up mirambika – a teachers' training wing, a children's wing, a research wing and a source wing. All wings are housed together in a building that is wide open to the surrounding gardens and playgrounds. It offers ample space for the children, parents, teachers, trainee teachers, volunteers and visitors that together make up mirambika: a vibrant community committed to the Free Progress method of life-long learning.

Free Progress learning is based on the Integral Philosophy of Sri Aurobindo. It aspires to be a system of education that is guided by the soul. In other words, its aim is to help children develop their entire nature – physical, vital (emotional/volitional), mental, psychic and spiritual – and turn it into a fit instrument for their soul to express itself in the world. To make this possible, the work of mirambika always has two components. On the one hand, mirambika tries to facilitate the development of mastery and perfection in all these realms of human nature. On the other, it aspires to be a space in which both students and teachers can embark on their long and difficult journey towards the discovery of the innermost truth of their being.

As the qualities and capacities of the children differ from child to child, there is only a minimum common syllabus. The rest of the time at school, the children are free to concentrate on their own areas of interest, while the teachers are available to inspire and encourage, to guide and protect. A structure like this allows for an optimal development of each individual child. It also helps children learn how to take responsibility for their own learning, a process in which the self-observation and reflective practices described in this book play a significant role. The results of it all is an environment that facilitates learning through direct experience and spontaneous discovery.

This book has come into being thanks to the love, commitment and efforts of all the members of mirambika and Mother's International school family.

# Learning Through Projects

## a handbook

Mirambika Free Progress School  
and  
The Mother's International School



Published by



**mirambika**

Free Progress School

Research Center for Integral Education and Human Values

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# INTRODUCTION

## Project-based approach to Learning

**T**he effort of publishing this book offered the facilitators of mirambika (Diyas) and The Mother's International School (MIS) the opportunity to re-visit the *raison d'être* for the project-based approach to learning, from Nursery to Grade 8 in mirambika, and between grades 1 to 4 in MIS. This publication was an opportunity for the facilitators to re-evaluate the extent to which practices and principles of true teaching fundamental to integral education are incorporated in the projects taken up with the children of these schools. Our learning has been that project work can indeed be effectively carried out both in classes with an enrolment of 12 to 15 on average, as in mirambika and with an enrolment of 35, as in The Mother's International School (MIS). Further to this is the satisfaction of sharing integral education practices with the aspiring fraternity of the country and beyond.

Integral Education is based on the philosophy of Integral Yoga as propounded by Sri Aurobindo and The Mother. Integral Education sets its sight on integral living and being. In this living and being, all parts and planes of the individual, including the physical, mental and vital, are put through experiences that serve to perfect these parts and planes with the conscious participation of the individual. This is so that they may become the willing servants of a greater Force beyond our own which wants to express and

manifest Itself in all its resplendence here on earth through these perfected instruments of man. Besides the three nature-bound planes of the physical, vital and mental are the subliminal planes of the Psychic and the Spiritual. The Psychic opening and Spiritual widening, both aid and to an extent are aided by the elevated working of the lower natures of the mental, vital and physical. The main aim of Integral education is therefore to take up these entities of nature and bring them to the highest state of perfection that is possible in man. The truest and deepest in the child, the soul, is invited to take its place in the forefront of existence and guide the unfolding of life in the individual towards its true purpose in life. This is the main reason that one cannot, underestimate the significance of the education of the facilitator or Diya in the whole scheme of things.

*At this juncture, we will consider the word 'Diya'. It is an endearing term addressing the facilitators of Mirambika. Combining the first syllable of 'Didi' or sister, which is 'Di' and the ending syllable of 'Bhaiya', which is 'ya', makes the word Diya. Diya also means the lamp, which gives the term another significance and serves as a constant reminder to the Diyas of the light they have to seek from within as they undertake this work of facilitation*

At this juncture, we will consider the word 'Diya'. It is an endearing term addressing the facilitators of mirambika. Combining the first syllable of 'Didi' or sister, which is 'Di' and the ending syllable of 'Bhaiya', which is 'ya', makes the word Diya. Diya also means the lamp, which gives the term another significance and serves as a constant reminder to the Diyas of the light they have to seek from within as they undertake this work of facilitation. In the free progress environment of mirambika, as well as in MIS in the younger classes, both the child and the facilitator share the common experiences of a learner; we are essentially co-travellers on a beautiful journey of self-awareness and discovery. The aim may be similar but the means and the processes take myriad shapes and forms and therein lies the beauty of such a practice in the learning space. Besides other practices, learning through the project method has been largely helpful in aspects of integral development in the learner, be it the child or the Diya. Focussing on integral development, in the physical, vital, mental, psychic and spiritual parts of the being cannot be envisaged without the integral involvement of the facilitator, who together with the child, allows each project to unfold itself. The facilitation of learning here is child-centred in that the child is the constant enquirer and decision maker at every step in the learning process. The facilitator is chiefly concerned with the creation of an environment needed for this unfolding and the flowering of the child as an individual, all of which are drawn out in the goal setting prepared at the beginning of the school year and allowed to evolve with the child's needs over the months. All goals are set with contributions from the child, the parents of children as well as by the facilitator. These go towards the realisation of the integral growth of the child. Facilitators work these goals into the projects during the project planning and execution stages. In addition, each project is looked at as a seamless whole. Hence, disciplinary demarcations are played down while attempts are made to view the project through various lenses such as the scientific, social, geographical, historical, and the literary. Projects taken up are some-



times at group/class level and at other times, individual, depending on the needs of the groups and each individual child. The significance of resources as aiding one's learning dawns in the children as each project is negotiated. The children are led to consider varied resources such as print, audio, visual, and the environmental resources including plants, animals and people in the immediate vicinity as well as distant resources.

The flexibility of the project method in learning lends itself remarkably to the three principles of true teaching that is pivotal to achieving the goals of integral education, that is the development of the parts of the being - the physical, vital, mental, psychic and spiritual. Facilitators consciously integrate the practice of one or all of these principles in ways unique to the project taken up. For instance, in incorporating the first principle, 'Nothing can be taught', the project is driven such that children discover from within them what they may already know unconsciously. Things have not to be told directly or taught to them. What they know is invoked by the sensitive and skilful facilitator by encouraging self-inquiry and search. When the little children of grade one, or Green Group of mirambika returned from the summer break last year, a carpet of grass greeted them, fresh and green. They were so captivated by this that the Diyas decided to make 'Grass' their topic of study. One story-telling activity invoked in the children empathy for the grass and the Green group children, who have been observed to be pulling out grass whenever they sat on the ground in the playfield or lawn, stopped doing that on their own accord, without Diyas telling them anything of this. Children hold in themselves beautiful ways of being, which comes to the fore when invoked with trust and sensitivity, and understanding.

*In incorporating the first principle, 'Nothing can be taught', the project is driven such that children discover from within them what they may already know unconsciously. Things have not to be told directly or taught to them. What they know is invoked by the sensitive and skilful facilitator by encouraging self-inquiry and search*

The second principle of true teaching, 'Consult the mind of the learner' is another principle that wards off the tendency to impose on all the children the same method when they have to learn something new. The projects are taken up either entirely through the initiative of the child or the facilitator makes suggestions, based on child's observation, keeping in mind the area that already shows as an area of concern or interest to the child. The project, 'The Indian Army' taken up by the Yellow Group or 2nd graders of mirambika with great interest and gusto, included in this book for your reading, is a good example of an attempt to live the second principle of true teaching. In the Diya's words, "The Diyas observed children talking about army men and the armed forces. During their free time, in the sand pit or in the garden, they spent their time making army base camps and fighting an imaginary army." Following this observation, the Diyas and the group of children engaged in a discussion on the tough training that soldiers have to go through and the hardships faced in protecting the nation. This was the beginning of the unfolding of the project on 'The Indian Army', a project the children, it appears, will remember for life.

The third principle, 'from near to far' sees a progressive development of the project from the immediate, intimate and known to the far, remote and unknown. It is only after the mastery of the near and intimate that the far is taken up progressively. Class one children of MIS worked on the project, 'Our Beautiful City, Delhi'. In the words of the facilitator, "We follow the near to far approach. We began the session with a project on 'Myself' which was followed by, 'Around Me' wherein the children familiarised themselves with the neighbourhood. After that we stepped out and discovered, 'Our Beautiful City, Delhi'." Similarly, when the Endurance Group of children from mirambika (Grade 5) decided to work on 'Countries', possibly motivated by the trips abroad by some children during the summer break, the Diya invited the children to first take a closer look at one's own country, India, and then take on the study of other countries in the world. Once knowledge in the immediate is established firmly, the knowledge of the far is acquired, building on the foundation already made by studying something that is near to one's experience. It is psychologically sound to build knowledge on firm foundations gained by learning intimately of that which is nearest to one and then progressing on to the farther and unfamiliar, grounded on sound mastery over the immediate. In mirambika, younger children take a trip within themselves to meet their 'andar ka dost', the being seated within, master of this life, and encouraged to turn therein always and to live in alignment with the sweet presence within. Ideally, with the steadiness in spirit thus gained, children negotiate the world around them with a progressive calm certitude and joy. Harmony within them creates a harmonious space around them that supports harmonious relationships. The practice of looking within percolates into the older children with practices of concentration, introspection, self-observation and reflection. The third principle is thus made a basis of one's being and informs all interactions within oneself and without.

*Project work also caters to different learning abilities and needs of the child in order to achieve fruition of the work carried out. This work is carried out through means left open to them, and influenced by the learning styles of each individual*

The project, 'Food and Taste' taken up by the Class two children of MIS brings us into ways of invoking senses in the process of knowing, in this case, the sense of taste. This was part of a series of projects on sense refinement crucial to the development of the vital in order to perfect the discernment of the being in choices it would make according to the will of the highest or deepest in the being with information received from the perfected instruments of the senses.

Project work also caters to different learning abilities and needs of the child in order to achieve fruition of the work carried out. This work is carried out through means left open to them, and influenced by the learning styles of each individual. A kinaesthetic learner would plan his project in such a way that his motor-skills are put into action in the progress of the project and which would also show in the product of the project. An auditory learner works on sounds and their different forms, pitches and intensity and to



the voice and the spoken while a visual learner is better stimulated by visual inputs through light and sight and gathers her learning points accordingly. It then becomes the facilitators' work to incorporate ideas and activities for each learner type in order to reach out to all children. Most of the projects presented in this book show examples of varied activities appealing to different learner types catering to different learning abilities while at the same time providing opportunities to the children to use all their faculties, namely, faculties of concentration, observation, memory, imagination, reasoning, synthesis, judgement and gain mastery over all of them in order to become effective learners in the long run.

## Content

What better way for the facilitators of mirambika and MIS to take cognisance of these focal points in education through the project method than to re-visit the projects in order to share these with a greater fraternity.

The chapters are arranged group-wise, and then project-wise, highlighting usually two projects per group. They carry a full report on the

- method involved, from idea conceptualisation to consolidation;
- processes with involvement of the children;
- statements focussing on the crafting of the Aim and Objectives,
- processes of self-inquiry through questions, of research and enquiry from multiple resources
- processing of the information gained and the learning acquired,
- consolidation of this learning through different media of presentation.

This is followed by a qualitative evaluation by both the facilitator and the child and sometimes even the peers, of the experiences throughout the duration of the project. The evaluation process culminates in a metacognitive and emotive reflective process of both the learner and the facilitator, with an eye and heart open towards the awareness and appreciation of an inner widening and deepening that may have occurred as a result of a deep and multi-faceted involvement in the project.

In the whole process of learning, the role of the facilitator is sacrosanct when insightfully, sensitively and intuitively administered. This book brings to you a good sampling of projects carried out in mirambika and MIS in the school year of 2018-19. We hope to bring to you, the presence of the facilitator through his or her reflective engagement, as he or she takes you on a learning journey. We share with you the internal processing that took place in the unfolding of each project, revealing the outcomes of children's involvement in terms of questions posed to oneself, with the mind (cognitive), vital and physical inputs, culminating in an expression wondrous in form, novel, unexpected and genuine. It is hoped that this book will do justice in bringing to you the rich experience of the child in a journey of inner growth. It is hoped that each project included in this book is a rich collection of learning styles, speaking in subtle languages the principles of true teaching, and that you, the reader, would engage with the projects described, and find the content useful for your own wondrous journey with children.





## Colours

*Little children are wonderful. The glow in their eyes attracts everyone around them. Every child is a Brahma Veta, 'truth knower', a being who lives within. Children observe the world around them through those eyes, from that world. They live in the present. For them, everything is as real as reality. The flower can dance, the butterfly can sing, the tree can mount the lion and go to his house... The purity within them helps them see the beauty in the world around.*

*Every year, in the month of July, a new batch of 3-year-old children walk into mirambika with a tender aspiration. The environment gets charged with the new, pure energy. Some children let go of their parents' hands and run to the sand pit or to the toy corners, as if they have known the place for ages. Others walk in with shy steps, hiding behind their parents, wanting to make friends with the new environment.*

*Gradually, the door of their inner world opens before us. Their world is full of love, trust, self-giving, beauty. It is wide open and amazingly full of energy. They begin to extend and expand their space and play area, like Vamana Avatar, the dwarf god who could occupy the three worlds with three steps. It is as if he has descended from heaven in the form of these children. Steadily, the little ones place their trust and confidence in us Diyas and we also find the way to look into the children's beautiful world.*

Children at this age are close to their psychic beings. Their inner and outer beings remain in the same consciousness. Children like to play with things. They can play alone for hours. They explore the environment through play. Their busy hands find play materials anywhere and in anything. They love to make things with their hands. Through play, they make a connection between their inner and outer worlds. They start making friends with children who have similar interests. Slowly, they start to play together.

The children live in their fantasy world. Their fantasy gets expressed in role play. They love to imitate each other and learn through that. They love repetition of songs, dances, stories, activities, games, even the day's routine. The same physical environment brings familiarity and gives security to them. The children know and understand much more than they really express in words.

What do we then do with them? We can teach them nothing but we can learn with them, in their company, and discover the truth that exists within them and in us, in collaboration.

There are some pointers we keep in view as we work with these little ones:

- Nurturing and preserving the child's innocence.
- Encouraging habit formation at all levels - physical, emotional, mental.
- Nurturing fantasy and beauty within.
- Helping language learning through living life beautifully.
- Building communication skills to express the inner world.
- Laying the foundation for personality building.
- Refraining from reading and writing activity.
- Inculcating sincerity in our own words and actions while working with children.

Project topics offer a wider scope to work with the children by sustaining their interest in various ways. The year began with the topic Dosti (friendship) to build trust and relationship among the children. Sand pit, गाड़ी, हमारा मीराबिका, हमारी माँ, माँ का बगीचा, मेरी कहानियाँ, वीर बालक, are some topics children usually love to work with. Within the larger topic, each day begins and ends with the same





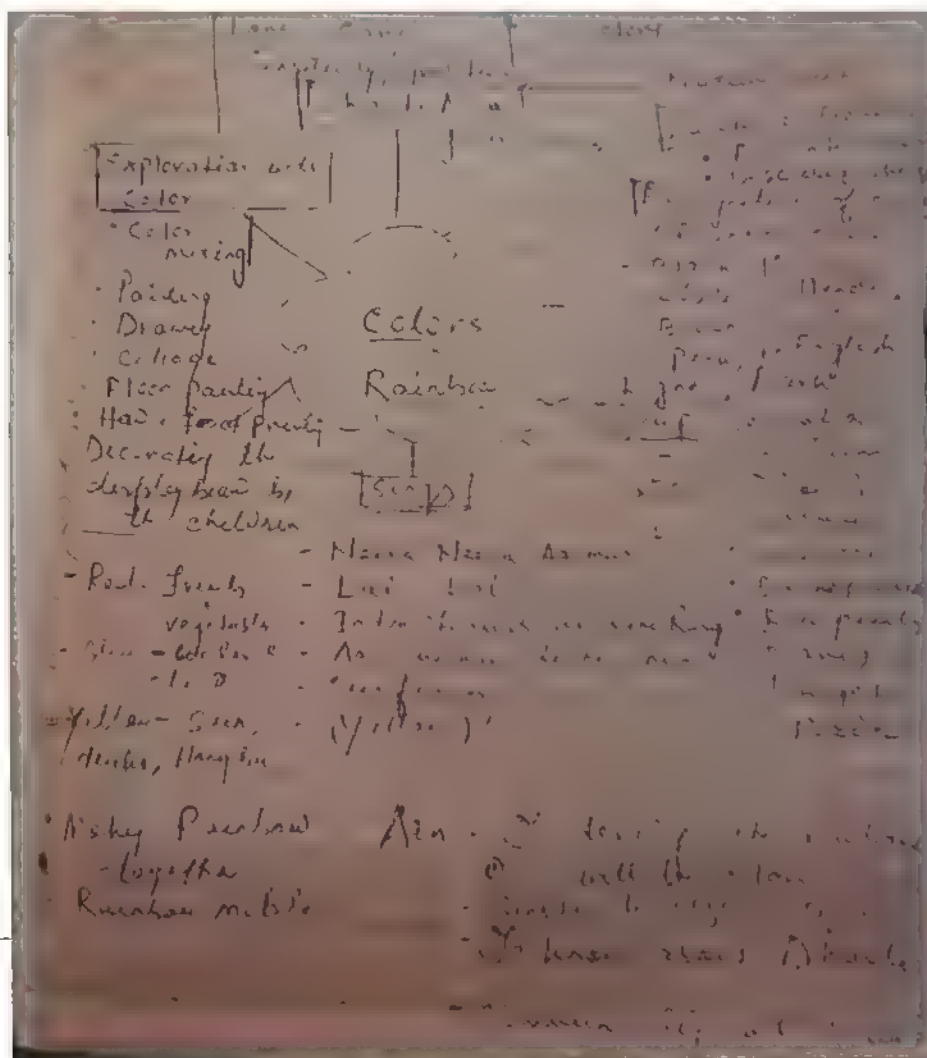
theme. Each day, there is a balance of both concentrated indoor activities as well as energetic outdoor activities. Activities are selected on the basis of age-appropriate needs as well as interests. These activities are planned for the whole group, for smaller sub-groups and for individual children. The activities are usually connected through a story to help the children align internally with the central theme.

Here is a sample of a project carried out with the Red Group. The topic was colours. This topic was chosen after Independence Day celebrations. The children had made a large tiranga and were enthused by the brightness of its colours. They would sing 'upar sooraj neeche ghas' while relating with the flag's

colours with enthusiasm. We also observed that the children would match one another's clothes and the colours of their water bottles. Children love to explore with colours, especially watercolours. With the readiness of the children and the fine weather, we embarked on a journey of colour exploration.

## Preparation

In the beginning of a topic, we Diyas sit together and discuss the aim and objectives and the possible activities we can take up with the children to achieve the objectives. Within the broader outline, the planning is done for each week and each day. We keep it open and flexible in order to synchronize with the children's rhythm.



### Aim of the topic

To appreciate the beauty of colours in our life and to develop love and care for Mother Earth, Dharti Maa, who bestows these colours on us

### Objectives for physical development

Gross motor skills

- To develop strength, stamina, coordination and balance using colours as exercise themes
- Children to give ideas for doing exercises and animal walks

### Supporting activities

- Exercises through stories related to colours.
- Movements of animals, fruits and vegetables as perceived by children, they would imagine how fruits and vegetables would move.
- Related fun games like traffic light, चिड़िया चिड़िया उड़ती जाए, हरा समन्दर, Yellow tiger and White tiger, मगरमच्छ को कौन सा रंग चाहिए and to play with the colourful parachute.
- Obstacle Court
  1. Open and close leg movements with colourful rings.
  2. Run zig-zag through colourful cones.
  3. Pass through a colourful tunnel.
  4. Hop through a horizontal ladder.
  5. Balance walking on colourful foam bricks.

Fine motor skills

- To develop fine motor skills like drawing (rubbing), painting (with brush, finger, cloth pieces), printing (hand, foot, leaf), paper tearing, collage making, and rubbing bricks.

### Supporting activities

- Decorating a display board with nature

scenes: sun, clouds, rainbow, land, water, trees, flowers, fruits, vegetables, ducks and bees.

- Mixing colours and floor painting.
- Making a rainbow mobile to decorate the group.
- Rubbing bricks to make red powder.
- Making powder from dry leaves.
- Making colours from beetroot and marigold flowers.

### Objectives for vital development

- To develop love and care for Mother Earth.
- To develop a relationship with colours.
- To develop the power of observation.
- To develop a group spirit.

### Supporting activities

- Singing songs related to different colours and their qualities:
  - आओ मिलकर देखें हम रंगों का जहाँ
  - इन्द्रधनुष के कितने रंग
  - लाल-लाल-लाल
  - नीला-नीला आसमान
  - Sunflower, sunflower, yellow and bright.
  - सुंदर रंग है पीला, रंग ये चमकीला
  - धरती माँ, प्यारी धरती माँ
- Storytelling with picture books: Indradhanush and Colourful Butterfly.
- Storytelling and dramatization of the story of Dharti Maa.
- Finding colours in nature and the surroundings through nature walks.
- Mixing different colours in water.
- Making things together like a big rainbow, clouds, ocean and sun.
- Wearing the similar coloured clothes on different days.
- Bringing coloured things from home to share and display.
- Decorating the group in a single colour,

with material collected from other groups or the surroundings.

### Objectives for mental development

- Language development
  - o To recognize the colours.
  - o To speak in complete sentences about colours.
  - o To describe a thing, focusing on its colour, in 3-4 sentences.
- To understand their perceptions of things.
- Relating things of nature with colours.
- Classification (matching and sorting) of things on the basis of colours and shapes.

### Supporting activities

- Singing songs about colours while touching coloured dupattas displayed in the group.
- Matching and sorting beads according to colours and shapes.
- Playing colour-related games.
- Describing colours of things brought from home or found in the surrounding.
- Solving puzzles.
- Asking questions, such as:
  - o किसने धरती माँ से क्या रंग माँगा?
  - o कौन सा रंग आपको अच्छा लगता है?
  - o हमारा group आज कैसा लग रहा है?

### Objectives for psychic development

- To relate with Dharti Maa.
- To be sensitive about nature and the environment.

### Supporting activities

- Narrating the story of Dharti Maa.
- Doing activities around the story of Dharti Maa.

### Preparation of the physical environment

- The display board was prepared with a picture of Dharti Maa. As we were beginning with the colour red, a red saree was hung as a decorative piece near the entrance.
- Red-coloured objects were placed across the school for the children to discover.
- Colour-related storybooks were collected from different groups and also issued from the library.
- Colour-based puzzles were arranged in the respective corner.

### Psychological preparedness of Diyas

- Along with proper planning and physical readiness, we prepared ourselves to be open towards the children's ideas and interest.
- We informed the parents about the forthcoming topic and asked them to dress the children in different colours on different days.
- We tried to develop a relationship with colours in our day to day lives.

### Process and observations

We decided to work on each colour for two or three days. This would help the children to experience the beauty of each colour deeply. We started off with red as the children could relate it with the name of their group.

On the first day, the group was decorated with red things. Children came in red clothes. Observing this, a few children asked, "दीदी ये सारे क्या हैं?"

Didi: आज लाल रंग हमारे साथ दोस्ती करने आया है, आपको कैसा लग रहा है?

Child 1: अच्छा लग रहा है।

Child 2: Group में लाल रंग दिख रहा है।

Child 3: ये मेला लग रहा है।





Seeing the picture on the board, some asked, "दीदी ये कौन है?" She responded: 'ये धरती माँ हैं।'

At circle time, Didi narrated the story of Dharti Maa, showing the picture on the display board.

"ये हैं धरती माँ, ये हम सबकी माँ हैं, पेड़, पौधे, जानवर, पशु, पक्षी, फूल, तितली, कीड़े, बच्चे, बड़े सबको इन्होंने बनाया है। वो हम सबको प्यार करती हैं। सबका ख्याल रखती हैं, हमें सब कुछ देती हैं। एक दिन धरती माँ घूमने के लिए आईं। उन्होंने देखा सब कुछ सफ़ेद है। उन्होंने सोचा सबको रंग विरंगा बना दें और सबको कुछ-कुछ रंग देने लगी। किसी ने

लाल रंग लिया तो किसी ने नीला तो किसी ने हरा तो किसी ने पीला, किसीने तो ज्यादा रंग मांगे, और धरती माँ ने सबको उनकी मनपसंद रंग दे दिए।"

"धरती माँ, प्यारी धरती माँ  
रंग दे दो धरती माँ"

Everybody sang along with Didi.

दीदी: टमाटर ने कहा, "माँ मुझे लाल रंग दे दो।"  
ऐपल उसके पीछे खड़ा था, उसने भी कहा, "माँ मुझे भी लाल रंग दे दो।"

Didi started to sing:

लाल-लाल-लाल-लाल  
टमाटर होता है लाल-लाल-लाल-लाल

Then she asked, "और किसी ने धरती माँ से लाल रंग लिया है बताओ?" Some children expressed their thoughts spontaneously. Others, when encouraged, thought about it and said the names of the red-coloured things they saw in the environment, and the song continued.

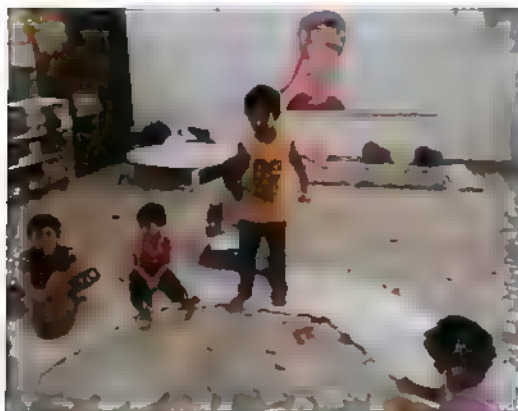
ह: सेब होता है लाल-लाल-लाल-लाल  
ई: Strawberry होती है लाल-लाल-लाल



स: चेरी होती है लाल-लाल-लाल-लाल  
 शु: मिर्ची होती है लाल-लाल-लाल-लाल  
 ना: Parrot का चोंच है लाल-लाल-लाल  
 ग: कलियाँ होती है लाल-लाल-लाल-लाल  
 म: फूल की पंखुड़ी है लाल-लाल-लाल-लाल  
 ग: अनार होता है लाल-लाल-लाल-लाल  
 न: होंठ भी होता है लाल-लाल-लाल-लाल  
 व: खिलौने होते हैं लाल-लाल-लाल-लाल  
 सू: गुलाबजामुन होता है लाल-लाल-लाल-लाल

The children and the Diyas walked around mirambika to collect red objects to decorate the group. The children were happy to be on this expedition. Some could observe only red objects so they were quick to spot different objects. Beside objects, their attention also went towards red dots in the wall paintings. Some children could not focus only on red objects; they observed everything else too. The children collected red-coloured things of their interest.

- S: a plant pot, a toy fire engine
- H: a sandpit toy



- S: a toy car, a ball
- G: a small box
- V: a guitar (with Didi's help)
- M: a small purse
- N: a purse and a book
- I: a photo frame

The next day, the children were asked to

choose one thing from the displayed things and express their thoughts about it in a few sentences. To set an example, Didi said a few things about a red-coloured book.

Then H picked up a red cup and spoke from her experience: "ये लाल रंग का है, इसमें चाय पीते।" She was encouraged to speak more, after which she added, "ये घर में रहता है, छोटा cup में चाय पीते हैं।"

G picked up the big red ball and observed, "ये red colour का है, इसके साथ बच्चे मैदान पर खेलते हैं। ये round है और पुराना है।"

A toy train लेकर आए और कहा, "ये train है, मीढ़ी (train track) वाले पर चलता है। उसको टकराना अच्छा नहीं लगता। Train में मम्मी, पापा, दादा, दादी, नानी बैठते हैं। वह station पर जाता है।"

Like this all the children described their favourite objects in a few sentences.

The next day, we went for a nature walk. The story continued. "चलो आज हम देखते हैं धरती माँ ने और किसी को लाल रंग दिया है?"

Some children were more focused, looking for red-coloured things. They saw pomegranate, hibiscus flowers and a plant with red leaves. Others looked for precious treasures like special bricks, dry leaves, and rotting gooseberries. One child found an orange. They also observed other things like a broken pipe, plastics, and red paint on the wall. They started collecting objects from nature. Each child had different interests. H collected nim-boli. G collected feathers while I and S found mausambis. M and V collected flowers and petals. Sh helped his friends collect other objects. They came back and displayed the collected things.

On the third day, some children brought red fruits and vegetables from home.

They displayed these pomegranates, apples and tomatoes in baskets. The children were encouraged to touch and smell these objects and speak from experience. They could express a few things on their own about the fruits and vegetables they chose. They were encouraged by leading questions like,

‘ये देखने में कैसा लग रहा है?’

‘छूने में कैसा लग रहा है, ठंडा या गरम?’

‘हलका या भारी, नरम या सख्त?’

**S** said: “यह टमाटर है, खाने में खाते हैं, इसको कढ़ाई में डालते हैं, फिर गैस पर डालते हैं। टमाटर मुझे हलका लग रहा है, ये ठंडा लग रहा है, ये soft है, इस पर एक निशान है brown colour का।”

**H** had brought an apple from home. She said, “ये सेब है, इसको खाते हैं। यह हलका है, ठंडा है, इसमें से खुशबू आ रही है। इसको काटकर खाते हैं, जूस बनाते हैं, सेब देखने में round है।”

‘**Sh**’ said, “ये अनार है, कभी छीलकर खाते हैं कभी पकाकर खाते हैं। यह भारी है, ठंडा है, hard है, इसके ऊपर निशान है। इसके अंदर अनार है।”

After describing the fruits, they helped Didi in cutting the fruits and ate fruit salad.

That day, all went to make brick powder. The children collected bricks and stones. In the process of powder making, they could differentiate the bricks from the stones. Making powder was an interesting activity for all. **A** and **S** were deeply involved. We collected all the powder in a container and put tilak on everyone’s forehead.

#### Fine skill activities

Children love to work with their hands. They were encouraged to colour four different fruits and vegetables: tomato, apple, pomegranate and cherry. They were introduced to various hand skills.

- Apple through paper collage

- Cherry and strawberry with crayons
- Tomato and pomegranate through drawing and painting

The children worked in three different corners, of which the children spent a longer time in the collage corner. Then came the colour blue to make friends with the children. The children wore blue dresses, and the group looked



serene and beautiful, decorated with blue sarees and clothes. As soon as the children came, we sat in a circle and discussed: “Group में क्या-क्या चीज़ आपको नीले रंग की दिख रही है?”

The children said: “Toys दिख रहा है नीले रंग का, जैकेट दिख रहा है नीले रंग का.” They also used words like ‘dark blue’ and ‘light blue’.

Then the children were asked to make something with the blue toys and blocks. It was an interesting activity for the children, who got involved immediately in the work. Some children made one thing, dismantled it and made something else







while others expanded on their original idea.

**A** took Lego blocks to make a 'metro train' and said, "यहाँ लोग ऊपर से नीचे जा सकते हैं। इसमें truck चलता है।"

**N** arranged the toy children and toy fish in a pattern and said, "यह किसी का घर है, यहाँ पर लोग खाना खाते हैं, fish और बच्चे fish सो रहे हैं। बच्चे देख रहे हैं। यह एक फूल है, यह एक crown पहना है, अपने plant पर जा रहे हैं।"

**S** said, "यह एक plane है, यहाँ पर मम्मी पापा बैठते हैं, दीदी भैया बैठकर कही जाते हैं, driver pilot चलाता है।"

**V** arranged the big blue blocks and said, "यह अच्छी सी गाड़ी है, इसमें white-white है और blue भी है, हम उसको चलाते हैं, यह बंद खुला भी होता है।"

**A** brought blue blocks and fish, arranged

them and rearranged them, but did not give a final shape to her arrangement.

Some children tried to make things together but it was difficult for them to work together with each other's ideas and therefore they could not come up with a definite arrangement.

The children again took a round of mirambika to return – as they had promised – the red things they had brought from different groups, and brought blue things to the group. The children were more observant this time. Some children, like **S**, were observing things but were not expressive. He saw a toy train in yellow group. Each child brought one thing or the other. They displayed the things in the group. Later they spoke about their favourite thing. In the skills corner, the children made



clouds with poster colours. They enjoyed putting light and dark shades of blue colour on the white paper with the help of a cloth piece. To make water pictures, the children were given cotton buds to make dots on paper. Though the children did this work, they were not fully involved. One child did not make dots but used the cotton bud as a brush and started to paint! So, we gave the children brushes to paint with, and they enjoyed that very much.



Next came green. This time, the children were involved in winding up blue things and displaying green objects in the group. Although this was a simple activity, it did not happen smoothly on that particular day.

Upon reflecting later, we realized the reason. The material resources were not well organized and tried out by the Diyas beforehand. So, when we were looking for things, the children got busy in their own activities and were not fully involved in the decoration.

That day, the children were wearing green dresses. When we sat in the circle, they were talking about who was wearing dark green and who was in light green. We continued the discussion using the terms हलका हरा and गहरा हरा. Some children already knew these terms. Slowly all the children learnt the difference between light and dark shades and expressed the



colour of their dress.

Each child had brought one green fruit or vegetable from home. They displayed these in different baskets, and we played games. For example, each child said what fruit or vegetable he or she had brought from home in complete sentences. Then the children played the name game. Baskets were kept in the circle and each child went and touched the vegetable which Didi mentioned in rhyme.

‘रानी जाओ

भिन्डी को छूकर आओ’

All children did not know the names of all the vegetables. The friends helped them to touch the right ones. After a few rounds of play, many children could remember the names of most vegetables.



The children learnt a new song about green colour.

गोभी का है रंग हरा

पत्ते हैं हरे रंग के

The children also played a game where one child picked up a vegetable and the others had to speak about it. For example, a Lady's Finger was described thus:

**V:** ये banana जैसा लग रहा है।

**I:** ये भिन्डी है, इसको काटते हैं और सब्जी में डालते हैं

**S:** इसको काटने से एक tail निकलता है

The next day, each child spoke about one fruit or vegetable in detail.

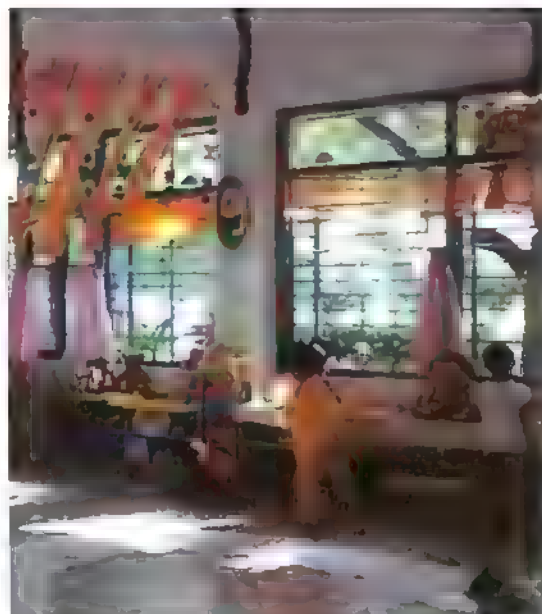
**A** spoke about परवल: "ये water melon लग रहा है। इसकी खुशबू अच्छी है। ये ठंडा है, इसको पकाकर खाते हैं। इसमें बीज होते हैं। बादाम भी होते हैं, ये हलका है, इसमें निशान है। इसमें हरा रंग है।

**S** spoke about लौकी: "ये लम्बा-मा snake लगता है। इसको big knife से काटते हैं। ये वेलन जैसा है, ये green है। ये इसका skin लग रहा है। इसकी सब्जी बनाकर खाते हैं। ऐंसे-ऐंसे कर के छिलका निकालते हैं। फिर वो white हो जाता है। फिर उसका जूस निकालते हैं।"

We went on nature walks to experience the greenery in nature and feel the green grass with our bare feet. It was the same field where the children would go and play every day, earlier too. But when they went barefoot, it was a different experience altogether. They happily ran from one end of the field to the other. Some started rolling on the grass! We had a nice time in the lap of Dharti Maa, and expressed our gratitude to Her.

In the skills corner, children painted grass with light and dark green poster colours. They painted the leaves of the trees and pasted the red fruits and vegetables they had made earlier. They put up the trees on the display board with Didi's help.

The next week started with yellow. The atmosphere was radiant with yellow things displayed in the group. The children were also looking bright, all dressed in yellow.



किसने धरती माँ से पीला रंग माँगा? Some children had brought yellow things from home. **I** had brought turmeric powder, **S** a lemon, **R** mung dal, **N** urad dal, **V** banana and **A**, corn flakes. **M** had brought yellow rice to share. Didi also brought a piece of fresh haldi (turmeric) to show to the children. Observing two different kinds of haldi, **N** said, "ये मोटी हल्दी और ये पतली हल्दी (powder) है।"

The children displayed these things and made some structures with yellow blocks, calling them vacuum cleaner, India Gate, train, monkey bar and slide. The children observed how to make colour from turmeric. They rubbed the turmeric pieces on stone to get the paste. As Didi applied the paste on her hands and cheeks, they smiled and followed didi.

In the group, during circle time, we



started singing a new song:

‘सुंदर रंग है पीला, रंग ये चमकीला  
हल्दी पीली, भुट्टा पीला,  
आम है खूब रसीला, सुंदर रंग है पीला’

This song was composed by the Diyas for the children. As the Diyas were taking interest in singing and dancing to their created song, children also took a liking to it and danced to the rhythm of the song.

In the skills corner, the children made the sun with a collage of paper. They also drew honeybees and made ducks with poster colours. Three children started making the sun. It took a long time to complete. Towards the end, they lost interest and could complete the work only with Didi's help. On the other hand, the children were quicker at drawing honeybees with crayons. They did that independently, attaching wings and a head to the main body. They also enjoyed colouring in the ducklings.

After introducing red, blue, green and yellow colours, it was time for the rainbow. The group was decorated with seven colours of sarees and dupattas.

While singing इन्द्रधनुष के कितने रंग, the seven coloured dupattas were unfurled as the children looked on in amazement. Swinging the dupattas, they danced with joy. As we sang the song, they would touch the dupatta of the colour we sang about!

This time, the children were encouraged to collect things in all the seven colours







of the rainbow from the group. It was interesting to see the way the children were bringing and arranging the things. There were children who brought the things instantly and arranged. A few children needed a little guidance before they could complete their arrangement.

A wandered about for some time. Then she brought the crayon boxes to take out seven colours. She matched the crayons with the dupattas and arranged them. When she was asked "ये कौन-सा रंग है?" She would point out towards the dupattas. Later, she started naming the colours in her own way: "ये पत्ते का रंग है, ये आसमान का रंग है, ये रात का रंग है, ये सूरज का रंग है।"

In small groups, the children were given colourful beads and were asked to separate them on the basis of colours. All children could do this easily. Then the children were asked to separate beads of each colour on the basis of shapes and sizes. A few children could do it while the rest arranged the beads in a pattern. One day, the children mixed 7 types of

colours in 7 glasses of water and poured each into 7 transparent bottles. Seeing the children's interest in this, they were given poster colours for floor painting. They were asked what they wanted to draw. The Diyas drew the picture and the children filled them with the colours using cloth pieces. All the children were involved in this activity.

In the skills corner, each child made a rainbow with poster colours. Then all the





rainbows were joined together into a big rainbow. The children liked it very much and danced with joy, saying, “हमारा इन्द्रधनुष बड़ा हो गया।” The children made

rainbow-coloured drops and pasted them on a thread to make a mobile. While a few children got confused between purple and dark blue, most children could work independently.

Finally, we decided to do a dance on the story of Dharti Maa and इन्द्रधनुष (rainbow). The children chose their favourite colours. **Sh** and **S** chose green, **H** orange, and **M** yellow. **I** and **V** chose aasmaani (sky blue) while **A** and **S** wanted dark blue. **G** and **A** went for purple and **N**, red. In the group, they participated in the dramatics joyfully.

For Durga Puja celebration, we prepared a musical play on Dharti Maa. On the day of celebration, the children were so mesmerized at seeing many children seated before them that they simply stood still. When Didi started to dance with them, they opened up and danced with joy.

This is how the children and we Diyas had our beautiful journey of colours, learning through our experiences.

### Evaluation of the topic

We worked on colours for about a month. The children were happily involved in their colourful exploration. They built a relationship with Dharti Maa in their own way through colours. They would mention Her in conversations. Since many children were absent on different days during the topic (due to illness), we could not complete some activities like making natural coloured powder and making rangoli with that.





### **Observation on physical development**

We could not observe any significant changes in the children's gross motor development. While playing fun games, earlier we would decide and they would play. Gradually, the children began to ask for specific fun games that they enjoyed. They could understand the guidelines of new games. While playing 'मगरमच्छ को कौन-सा रंग चाहिए', they could find things of specific colours in the immediate surrounding and use them. They played as a team.

The children demonstrated increased confidence in the area of fine motor development. Some children would be involved in the work till the end.

### **Observation on vital development**

The exploration with colours helped the children get more settled in the group activities. Many children who usually liked to play with toy cars and kitchen sets joined on their own to play with colours. The group spirit also developed as they took on the responsibility to make their group more beautiful. As the project was drawing to its conclusion, the children experienced the colors of the rainbow. They were drawn to the song 'Indradhunsh ke kitne rang'. While

singing this song in unison and with great joy, they further breathed life into it by spontaneously touching each coloured dupatta hanging in the group.

### **Observation on mental development**

Children gained confidence about articulating their expressions. They could speak in three to four sentences about anything. It was amazing to see the perception of the children when they were speaking about the things they made with the colourful objects. Many children knew the names of most of the rainbow colours, in Hindi or English. This topic helped them learn the names of colours in both the languages. Most of the children were in love with the name आसमानी and the colour as well.

### **Observation on psychic development**

Diyas always tried to align the activities with the objectives of the topic, that is to develop a love for Dharti Maa. The group harmony lived throughout the project, flowing with the movements of colours. The look of amazement in their eyes as they discovered their relationship with colours in their day to day life was gratifying.



### *Self-observation by the Diya*

Colours was a beautiful topic and I was involved in beautifying the physical environment and enjoying the unique vibration of each colour. In the beginning, I wondered whether to start the topic with the rainbow or

with individual colours. Then the idea of Dharti Maa descended. I felt that this idea was a harmonizing centre around which we would weave the topic. With this topic, I aspired for myself and for my children to grow as sensitive beings, holding love and care for Mother Earth.



## Banyan Tree

*At this age, the children have already spent one year in mirambika. They are familiar with the space, the people, the routine, the activities, the language of mirambika and its spirit. The innocence, the state of living within, and 'communicating with the inner friend' is intact in many children. They are more alert and observant of their immediate surroundings. They are curious to understand the world around them, as separate from their fantasy world. They go in and out of their world of fantasy with ease and love to indulge in fantasy play with this friend who understands them well. The mind is more developed to generate thoughts and ideas, which they express through words, stories, body movements, play and art. They are more articulate, and interact with an understanding of each other. Their group sense is more developed. They act like big brothers and sisters to children of the Red Group. They feel responsible towards them and leave no opportunity to protect and guide them. The children appreciate the qualities of courage, frankness and helpfulness.*

*At the beginning of the year, the Diyas prepare a goal set consciously to help the children to grow into completeness. The aim is for the body to develop to its optimum capacities with all its abilities, the emotion to grow in sensitivity, the mind to grow in awareness about the inner and the outer worlds, the faculties to develop, and the inner being (friend) to unfold, come to the fore and to always guide the way.*

*To support this, several projects are undertaken during the year, based on the children's needs and interests. The topics taken up this year were: 'Our new group', 'Bargad ped', 'Insects', 'Pattern and Design', 'Me and Myself' and projects related to celebrations.*

### Why this Project

It was the third week after the children had come to the blue group. After two weeks of exploration, their need to play with the group's toys and play materials was quite satisfied. There was a readiness to take up challenges and explore in a wider environment. This topic was chosen to give the children an experiential learning environment, especially with the banyan tree, 'Bargad ka Ped'. This experiential, physical exploration would help the children bond with 'the banyan tree' from the depth of their being, and would enable them to express their experiences with the language from within.



**Aim: Learning through experiences with 'the banyan tree'**

**Objectives:**

- Language development through experiential learning.
- Enhancement of sensitivity towards nature.
- Nurture fantasy in the children through natural surrounding.

### Preparing the physical environment

The place around the banyan tree was

cleaned. A swing was suspended from the banyan tree and a model of a tree was brought into the group.

### Preparing the psychological environment

Before initiating the topic, we the Diyas visited the banyan tree. Some climbed the tree, some sat quietly under it for some time, observing the beauty of the environment. Later, we shared our experiences with one another. We aspired to create a beautiful experience with the children and the tree in the coming days.

### Physical Development

Gross motor skills:

Developing strength, stamina, flexibility, agility, hand-body balance.

### Activities

- Regular exercises and games.
- Swinging from the swing and aerial roots of the banyan tree.
- Climbing the banyan tree.
- Digging and lifting soil in containers to make a model of the banyan tree.





### Objectives for Fine Motor Skills

- Crafting things with banyan leaves, such as कटोरी.
- Developing drawing skills.

### Activities

- Collecting leaves and making कटोरी, plate and toran.
- Pasting leaves to make animal and bird shapes.
- Making leaf and bark rubbings.
- Observing and drawing.
- Illustrating the story and giving form to the story in a book.
- Making rangoli with leaves, fruits, sticks and flowers.

### Objectives for Vital Development

- Developing sensitivity towards nature.
- Developing sensitivity towards trees.
- Honing senses of sight, touch, hearing, and smell.

### Activities

- Spending time near the banyan tree.
- Cleaning the area around the banyan tree.
- Observing the friends of the banyan tree.
- Listening to the sounds around.
- Helping one another in climbing and swinging.
- Listening to stories on trees.
- Singing songs on the tree: मोटा तना, पतली डाली
- Creating and enacting songs about trees.

### Objectives for Mental Development

- Developing the power of minute and detailed observation
- Developing the faculty of imagination and perception
- Developing the ability of expression.

### Activities

- Asking questions such as: आपको यहाँ क्या अच्छा लगता है?
- Describing leaves and finding differences between two leaves.
- Expressing thoughts about मैं और वरगद पेड़, 'अगर मैं वरगद का पेड़ होता तो क्या करता?'
- Making a step-by-step story book with illustrations.

### Objectives for Language development

- Expressing thoughts and feelings in complete sentences.
- Developing vocabulary (तना, डाली, टहनियाँ, जड़, जटाएँ, ठण्डक, छाया, शीतल, पवन, कोपल, छाल, विशाल काय, उपयोगी, उपकार).
- Articulating 10–15 sentences about their experiences with the banyan tree.
- Narrating stories in continuation.

### Objectives for Initial mathematics

- Counting up to 20 leaves with one-to-one correspondence.





- ♦ Arranging things in the sequence of 1, 2, 3, 4 and big to small.
- ♦ Developing concepts of shape, size, weight and colour (हल्का-गहरा, बड़ा-छोटा, गोल-लम्बा, हल्का-भारी).
- ♦ Making designs with natural things.

### Activities

- ♦ Making rangolis with things collected from nature.

### Objectives for Psychic Development

- ♦ Developing quietness within (Diyas and children).
- ♦ Being with nature.
- ♦ Communicating with the banyan tree.

### Activities

- ♦ Cleaning the space around the tree.
- ♦ Lighting diyas, making rangolis and tying torans.

### Process and Observations

While we worked on this topic, the children used to spend a lot of time under the banyan tree. Some days they would spend the entire day there even sharing food under the tree.

### Children's unique relationship with the banyan tree

The banyan tree was the same but each

child had a unique bonding with it. When the children were left on their own to explore around it, each child would be busy doing something or the other. Some would explore different ways to climb it and come down. Some would collect treasures under the tree. Some would help each other on the swing. While doing all these, all of their senses would be wide open to nature. Later, each would have a different story to tell according to his or her interest and experience.

A was the first to see the swing and informed her friends about it with much joy. After playing on the swing for some time, her attention went towards the red-coloured young leaves, which had fallen to the ground. She observed the softness of these leaves and exclaimed, "दीदी, देखो ये कितना cute है।" When another soft leaf fell her way, she said, "दीदी, देखो-देखो वरगद पेड़ ने ये मेरे लिए गिराया है, क्योंकि मुझे बहुत पसन्द है।"

A was more interested in climbing the banyan tree. She would find different ways to climb higher and higher. In her eyes, one could see the joy of achievement. She would call the Diyas and friends to see her sitting high on the



branches. She would say, “मैं मेहनत करती हूँ।” At other times, she would collect leaves and flowers from the ground. She would make कटोरी with the leaves and say, “मैं इसमें फूल घर लेकर जाऊँगी अपने भाई के लिए।”

On the first day near the banyan tree, **Ah** was collecting red buds on a leaf. He said “ये मैं अपने मम्मा के लिए लेकर जाऊँगा।” Soon he found a place under the banyan tree. He would sit there, leaning against the tree. At times, he would hold a stick in his hand, talking to himself. When didi asked him what he was saying, he explained, “ये भेग मोफा है, मैं यहाँ आगम कर रहा हूँ।”

**Ah** took great interest in playing on the swing, sensing its tangent movement.

One day, owing to his natural curiosity, he took some friends to see the nearby vegetable garden. They saw lemons under a tree. He came back with some lemons in his hand and told Didi, “ये जो दूर में purple

रंग के पत्ते दिख रहे हैं न, वहाँ निम्बुओं का मेला लगा हुआ है।” Another day, he was holding a long stick in his hand, making पूं-पूं sounds, as if he were an engine and was running around the banyan tree. Two other children joined him. He said, “ट्रेन चला रहा हूँ, ट्रेन का driver भैया हूँ।”

**N's** interest was in the leaves. He showed a leaf to didi and said, “दीदी, देखो मुझे एक design वाला पत्ता मिल गया।” He shook the leaf near didi's face and said, “चलो मैं आपको थोड़ी हवा दे देता हूँ।” He observed the softness of the red leaves minutely and expressed, “Red पत्ता soft लग रहा है क्योंकि red पत्ते में छोटे-छोटे वाल लगे हैं।” He enjoyed the cool breeze near the banyan tree.

Whenever a strong wind blew, he told his friends, “लगता है वाग्मि होने वाली है।”

### Togetherness

This topic helped develop ‘togetherness’ amongst the children in different ways. We observed that while collecting treasures under the banyan, if one child found anything new or special, he or she would show that to friends and Diyas with immense joy.

They would share their ideas with each other and play together. One day, **A** came up with the idea of making a कटोरी with a banyan leaf. Some children like **F** and **N** took interest and learnt this skill. They started making more katoris for their friends to keep the nimbolis. **N** said, “मैं कटोरी supply कर रहा हूँ।” Some collected flowers and nimbolis and others decorated the katoris with flowers. **P** took the lead in assigning different activities to different children. While arranging the katoris, some conflicting situations also arose. With Didi's help, the play went on. They cleaned around the banyan tree and





decorated katoris around it as a token of their love.

With the Diyas' help, the children made a model of the banyan tree inside the group. They collected soil, spread it on the floor, decorated the place with banyan leaves, sticks, fruits and flowers. Towards the end of the topic, we found them playing together as a group, the make-believe play of preparing food items (like in a restaurant) with things collected from nature.

Sitting under the banyan tree, the children and the Diyas decided to make a song about it. The children shared their thoughts on 'वरगद का पेड़ हमारी क्या मदद करता है?'

Didi: वरगद का पेड़ है ये वरगद का पेड़ and children joined in with their experiences and expressions:

P: झूला झूलाता हमें ये वरगद का पेड़ पेड़ पर चढ़ाता हमें ये वरगद का पेड़



S: वरगद का पेड़ सुनहरे पत्ते देता है

A: फल देता है, हमें वरगद का पेड़

V: वरगद का पेड़ हमसे सजवाता है फूल और पत्तों से सजवाता है

S: ताकतवर है ये वरगद का पेड़

A: मुझे जव गम्भी लगती है, वरगद का पेड़ पत्ता देता है पत्तों से मैं हवा करती हूँ और गम्भी चली जाती है

A: वरगद का पेड़ अच्छी मोच देता है वो हमें ताकतवर बनाता है

And thus a nice song was created. Later, the children sang and enacted the song for the children of the green group.



### The struggle, the achievement

Initially, some children faced difficulty in climbing the tree independently. One day, Didi climbed the tree and called a child, “S आप वरगद पेड़ से दोस्ती करने आ जाओ।” He replied, “मैं नीचे से दोस्ती करूँगा, मैं शक्ति दे रहा हूँ।”

Later with Didi's help, each child learnt to climb the tree on their own. They expressed their joy in different ways. S was overjoyed the day he climbed independently. He gained the confidence to try the difficult path. After his achievement, he came to a didi and said, “वहुत ही मेहनत का सफर था कितनी मेहनत करके चढ़ना पड़ा ऊपर।” At that time, a peacock was running towards the banyan tree. S said, “दीदी, ये मोर जरूर मेरे पास आ रहा है क्योंकि मैं बहुत ऊपर चढ़ गया था इसलिए भाग-भागकर आ रहा है मुझसे मिलने।” S also wrote about his achievement in his story book, and A spoke about it while sharing his banyan tree experiences.

### Creativity

The children's busy hands always look for an opportunity to make, to create

something. On their own, they made designs on the floor with things they had collected from nature. With Didi's guidance, they used leaves to make animal figures such as cat and rat. They pasted it on paper and drew background pictures too.

### Imagination

After some days, the children were encouraged to make their step-by-step story books. Quite a few children based their stories on the banyan tree.

N's narrated his story in an interesting way with voice modulation. Later, he also illustrated his story.

“एक दिन चिड़िया उड़-उड़कर वरगद पेड़ को ढूँढ़ने के लिए जा रही थी। फिर चिड़िया ने सोचा वरगद पेड़ पीछे तो नहीं रह गया। और वो पीछे रह गया था। फिर चिड़िया को उड़-उड़कर के वापस जाना पड़ा। फिर एक मधुमक्खी आई जो वरगद पेड़ को ढूँढ़ रही थी, उसका रस पीने के लिए। उसने चिड़िया से पूछा, “क्या आप ने वरगद पेड़ को देखा है?” चिड़िया बोली, “नहीं, आप अपने पंख वन्द कर दो और मेरे ऊपर बैठ जाओ, हम वरगद पेड़ को ढूँढ़ने जाते हैं।” रास्ते में उन को एक plain पेड़ मिला। उसने कहा, “मैं भी वरगद पेड़ को ढूँढ़ रहा हूँ।” फिर चिड़िया अपने पंख वन्द कर के, घोंसला बना के, पेड़ के ऊपर बैठ गई। फिर तीनों आगे चले। फिर उनको वरगद पेड़ मिल गया, वो एक पेड़ के पीछे मस्ती में नाच रहा था, मेरी तरह।”

P's story was about the banyan tree and squirrels:

“एक वरगद का पेड़ था। उस वरगद के पेड़ पर रोज़ बच्चे चढ़ते रहते थे और रोज़ जब आते थे line में खड़े हो जाते थे और एक-एक कर दोस्ती करते थे। वरगद पेड़ के पास जब आते थे तो वे हर समय खेलते थे, collection करते थे, झूला झूलते थे। वे हर रोज़ चढ़ते थे।

गिलहरियाँ आती थीं वरगद पेड़ के पास। जब वरगद पेड़ से थोड़ा सा दाना गिरता तो उस दाने को गिलहरियाँ खाती थीं। गिलहरियाँ जब लेती थीं अकेले नहीं खाती थीं, सबके साथ sharing करती थीं और बाकी गिलहरियाँ उस

गिलहरी को thank you बोलती थीं। उस दिन मे सारी गिलहरीयाँ अपना खाना ढूँढती थीं और वह वच्चे गिलहरीयाँ को देखते थे। उनको गंज आकर प्यार करते थे। गिलहरीयाँ ने उन वच्चों के साथ दोस्ती कर ली।”

One day, S was telling his friend, “मैंने एक दिन देवरा वगद पेड़ के ऊपर छिपकली चढ़ रही थी, वो उसकी दोस्त था।” The same lizard was there in his story as well. He made a story book with illustrations.

“एक दिन की बात है, सारे blue group के वच्चे वगद पेड़ के पास गए थे।



फिर सारे वच्चे वगद पेड़ को हिलाया तो एक बड़ी सी छिपकली नीचे गिर गई।



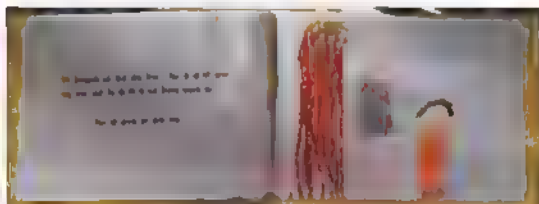
तो मैंने उसको पर्वत की तरह उठा लिया।



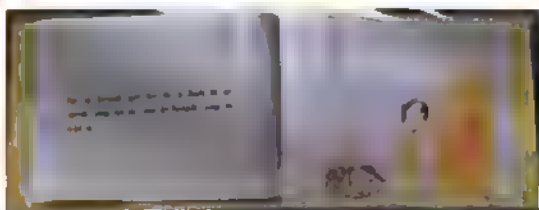
फिर थोड़ी देर बाद वगद पेड़ नीचे आने लगा और मुझे ऊपर उछाल दिया। फिर मैंने एक डाली को पकड़ लिया। फिर डाली छूट गई और मैं नीचे गिरने वाला था लेकिन मैं दोनों पैरों पर इस्मानों के जैसे खड़ा हो गया।



मैंने छिपकली को नीचे छोड़ दिया। फिर से वो मेरे ऊपर चढ़ गया, क्योंकि वो मेरे से गले मिलना चाहता था। फिर वो अपना घर चला गया।



फिर वो छिपकली दूसरे दिन मुझसे मिलने मेरे घर आ गई, उसका नाम था, वच्चे शेर छिपकली, उसका रंग सफेद था।



*Expression gives value to life in the outer world. In a five year old child's inner world fantasy expression, one can see how he is dealing with his fears of a lizard by being in close communion with the banyan tree; he learnt to solve the problem of his life by being bold, but as a sensitive child he cared for the chhipkali.*



**S's story was about his experience of climbing the banyan:**

‘मैं एक दिन बरगद पेड़ के पास गया था। मैंने अपने दोस्तों **A** और **F** को अपने साथ बुलाया। हमने पत्ते और फूल उठाए और नीमू भी। फिर हम बरगद पेड़ पर खुद चढ़े। वहाँ पर बैठ गए और देख रहे थे। ऊपर से गीता दीदी को देखा। फिर वहाँ एक वन्दर आया। वह हँस-हँसकर आ रहा था। हँसकर दोस्तों से गले मिल रहा था। वन्दर हँस-हँसकर घूमने हमारे साथ जा रहा था।’

**“अगर मैं बरगद पेड़ होता तो”**

To kindle the children's imagination, didi asked, “अगर आप बरगद पेड़ होते तो क्या करते?” It was interesting to see each child's unique perception.

**S said,** “अगर मैं बरगद पेड़ बनता तो जब मेरे ऊपर पत्ते आते तो मैं अपने दोस्तों के साथ खेलता और वे मेरे ऊपर चढ़ते। जब चढ़ने आते तो मैं भाग जाता। अगर चिड़िया मेरे ऊपर बैठने आती, तो मैं अपना कपड़ा बदल लेता और उसे लगता कि ये कोई अलग दोस्त है।”

**N said,** “मैं बरगद पेड़ होता तो सबको तीलियाँ देता और कटांग बनाने के लिए पत्ते देता।”

**A said,** “मेरे ऊपर सब चढ़ेंगे। मैं बोलूंगी कि ये मैं हूँ, मैं बनी हूँ बरगद का पेड़। फिर सब बच्चे उतर जाएँगे फिर मैं magic से बन जाऊँगी।”

**S said,** “मैं हिल भी नहीं पाता और मैं हिलता और मेरा एक लम्बा हाथ होता तो मैं ऊपर से एक पत्ता ले लेता। अपने आपको हवा दे देता। जैसे बरगद पेड़ के ऊपर एक दूसरा बरगद का पेड़ है और उसके ऊपर एक तीसरा है, क्योंकि मैं बहुत बड़ा बन जाता, लगता कि मैं इंसानों के बीच बरगद का पेड़ बन गया।”

**Experience with the banyan tree**

Towards the closure of the topic, the children were sharing their experiences freely. Each one expressed in a unique way. When they were focused on the theme, each one could speak 8 to 10 sentences about it.



P expressed her thoughts as if she was having a conversation with the banyan tree: "हमने झाड़ू लगाया। वरगद पेड़ ने बोला आप मेरे झूले में झूलो। वरगद पेड़ ने बोला आप किसी और को झूलाना जैसे कि अद्विक, अद्विका, सारांश, आप partner बन के झूलाना, वे वच्चे आपको झुलाएंगे। उसने बोला जब आप मेरे ऊपर चढ़ोगे तो ध्यान से चढ़ना। वरगद पेड़ ने बोला था हर रोज़ यहाँ आना। आप जब आओगे न आप अपने सारे दोस्तों को लेकर आना। वरगद पेड़ ने कहा आप जब मेरे यहाँ आओगे जूते पहन कर आना क्योंकि हम चप्पल पहन कर गए थे। पेड़ ने कहा आप हर दिन मुझे प्यार करना। वह बोला जैसे आप मुझे इधर करते हो, मुझे हर रोज़ करना। फिर इधर-उधर करके पेड़ पे चढ़ना। झूला झूलने जब हम वहाँ जाते हैं हमें बहुत सी कोपलें मिलती हैं। मुझे वरगद पेड़ के आसपास घूमना अच्छा लगता है, घूम-घूमकर कभी फल मिल जाते हैं कभी फूलों की पंखुड़ियाँ मिल जाती हैं।"

**A's expression lead to a good conversation. He shared his story from the perspective of the banyan tree.**

"वरगद पेड़ को अच्छा लगता है जब हम उसके ऊपर चढ़ते हैं और गले लगाते हैं। वरगद पेड़ को अच्छा लगता है जब हम उसके पत्ते उठाते हैं जो वो गिरता है। वरगद पेड़ को अच्छा लगता है जब हम उसकी जड़ से झूलते हैं। वरगद पेड़ पर जब हमें नहीं पता है कैसे चढ़ते हैं, तब वो हमको कैसे चढ़ते हैं बताता है। पहले एक पैर एक branch पर डालो, एक हाथ से एक branch को पकड़ो, दूसरे पैर को रखो। मेरी जड़ आपको help करेगी ऊपर चढ़ने के लिए। आपको अच्छा लगता जब हम आपको सजाते हैं। वरगद पेड़ को अच्छा लगता है जब हम गोल-गोल भागते हैं और कभी भी नहीं गिरते। वरगद पेड़ को अच्छा लगता है जब हम smile करते हैं। वरगद पेड़ को अच्छा लगता है जब हम उसकी डंडी लेते हैं। वरगद पेड़ को अच्छा लगता है जब हम सब उसके नीचे शान्त बैठते हैं और शान्ति से chant करते हैं।

दीदी: आपको कैसे पता चला कि वरगद पेड़ को अच्छा लगता है?

अ: मुझे बताया था।

दीदी: आपको क्या अच्छा लगता है वरगद पेड़ के पास?

अ: उनके नीचे बैठने में, उनके ऊपर चढ़ने में।

दीदी: आप वरगद पेड़ के पास क्या करते हो?

अ: शान्त बैठता हूँ, smile करता हूँ। जब मुझे छोटी-छोटी डंडियाँ मिलती हैं, मैं उनको पकड़कर बैठता हूँ। जब मैं धनुष पकड़ता हूँ, जब वो arrow देखते हैं, गड़वड़ सोच भाग जाती है।

दीदी: कैसे भाग जाती है?

अ: जैसे गड़वड़ सोच आती है 'रंगोली को तोड़ दो' मैं धनुष दिखाता हूँ, वो arrow देखता है, उनको पता होता है और वो अपने घर में चले जाते हैं।"

### Summary of the topic

वच्चों को पेड़-पौधों से प्यार का रिश्ता बनाकर, धरती माँ की सजग सन्तान बनने के लिए समूह में 'हमारा वरगद का पेड़' विषय लिया गया। वच्चों को उस पेड़ के पास जाना पहले से ही अच्छा लगता था। वो वहाँ कुछ समय खेलते थे, पेड़ के ऊपर चढ़कर वापस आ जाते थे। इस विषय पर काम करते समय, वरगद पेड़ के साथ रिश्ता बनाने के लिए, वच्चों ने अधिक समय वरगद पेड़ की छाया में बिताया। पहले दिन उनका मन पेड़ पर चढ़ने में और झूला झूलने में रहा। जैसे-जैसे वहाँ ज्यादा समय बिताया, उन्होंने अपने स्वभाव के अनुरूप खेल या कार्य को अपनाया। जैसे कुछ वच्चे पेड़ के ऊपर चढ़ने में आनंद लेते तो कुछ नीचे घूम-घूमकर तरह-तरह की चीजें इकट्ठा करते। कोई पत्तों से कटोरी बनाते तो कोई पत्तों में गिरे हुए फूल और लाल कोपलें इकट्ठा कर के सजाते, तो कोई डंडियाँ पकड़ कर तलवार या धनुष-तीर चलाते। अपने स्वभाव को प्रकाशित करते हुए उनकी सारी इन्द्रियाँ भी जागृत हो उठीं। पीले-हरे पत्तों को उठाकर उनके डिजाइन को देखते, पत्तों से कटोरी बनाकर फूल इकट्ठा करते, नीम्बू, डंडी, आदि तरह-तरह की गिरी हुई चीजों को अपनी रूचि से उठाते। वेवी पत्तों को छूकर उनकी कोमलता को महसूस करते, अलग-अलग चिड़ियों और गिलहरी की आवाज को वो सुनते।

अपने नए और सुन्दर अनुभवों को वो आनन्द भाव से दोस्तों और दीदियों के साथ प्रकाशित करते हैं:

"छू कर देखो इस पत्ते को, कितना soft है।"

पत्तों को हिलाते हुए, “चलो मैं आपको थोड़ी हवा दे देता हूँ।”

झूले का आनन्द लेते हुए, “लगता है यह नीचे हो गया है, अब बैठना आसान है।”

“दीदी वंशिका ने मुझे धीरे झुलाया था, मुझे तेज झूलना है।”

हवा के वेग को महसूस कर के बोलते, “लगता है कि बारिश आने वाली है।”

अपने अनुभवों पर प्रकाश डालने के लिए यदि सही शब्द पता नहीं हो तो वे सहजता से अनोखे शब्दों का प्रयोग करते हैं। जैसे, वरगद के झूल को दिखाते हुए “दीदी ये जो पेड़ की रस्सी है न वह हमें चढ़ने में मदद करती है।”

जब झूला टेढ़ा जा रहा था तो एक बच्चे ने बोला, “दीदी, ये झूला भाग रहा है।”

अपने अनुभव को रूप देकर वरगद पेड़ का चित्र बनाना, उस पर गाना बनाकर नाटक करना, उसकी कहानी को विस्तार रूप से सुन्दर भाव के साथ बताना और इसके साथ-साथ पत्तों का प्रयोग कर चूहे और विल्ली आदि तरह तरह की आकृतियाँ भी बना रहे थे।

वरगद पेड़ के साथ रिश्ता तथा अपने अनुभवों को बच्चों ने कहानी और चित्र के रूप में व्यक्त किया जो कि उनके अन्दर पनप रहे एक नए रिश्ते पर प्रकाश डालता है।



### *Reflection by the Diya*

It was an enriching experience for the Diyas to spend time near the blessed tree with the children and experience everything through a child's eye. It was interesting to understand them and to find out the purpose behind their actions and inactions. It was a great challenge for us to watch their activities with patience, without interfering and to place trust in these little souls. When

the children were expressing their experiences, the flow in their speech explained to us what The Mother meant when she said: 'Language flows from within.'

There were many planned activities that we did not undertake as we found that nature is there in plenitude to teach what each of us can receive. The children felt free and comfortable in the lap of Mother Earth and took on the responsibility of their own learning.



## Pattern and Design

*Learning is a continuous process. It evolves from within when a child involves himself in his self-discovery spontaneously in the natural or created environment. These five- year old children made progress in their self finding as also in their world finding while working to develop their relationship with the 'Banyan tree', 'the Bargad Ped' and its surrounding and by this, 'Mother Nature' nurtured their body, mind and emotion to their utmost; their 'Andar ka dost' (inner friend) and the outer environment were in harmony through this process. They are now emotionally more confident and ready to care and share with the creatures in nature, physically become skillful and strong to take up more work in their hands and mentally more observant and expressive of the things in their immediate surroundings. Their observational expression is mostly found to be the combination of their seeing and perceiving of different types of things, creatures, pattern and design, their shapes and sizes. Their eyes would get attracted towards the tiniest leaf, insects, a peacock feather, a design on the stone and mud and they show them to Didis and friends. That was the right time for us to work with them on the topic of 'pattern and design'.*

Observation is one among the five important faculties that need to be systematically developed in the children, beginning from childhood.

Observation is concentrated attention which happens not only through sight. We also have two hands to feel, a nose to smell, and a mouth to taste. We use all five senses to observe the world around us. It naturally begins with sight and gradually the child learns to use his different senses whenever and wherever the opportunity presents itself.

Some children have a natural ability to observe the newness in their surrounding and show curiosity to know more about it. When they are in nature, they are naturally attracted to different things, according to their interest. From a tiny little feather to a huge tree, anything may attract their attention. They collect things from nature with great joy. The minute observation ability generates further interest and that enables them to build up deeper and wider understanding. There are also children who need external motivation. Their friends' interest also generates curiosity in them. Sometimes the observation related games or the topic that is taken in the group opens their eyes and they develop an interest in them.

The topic, 'Pattern and design' helped to develop focussed attention and concentration in observation and creative ability in the children. Patterns occur extensively in nature in the way lines, curves and shapes are arranged on objects found in nature. It is a great marvel to observe the intricate ways in which these are inscribed on nature and therefore a great exercise for observation. The intricate and minute patterns continue on a surface set to a certain design which invokes wonder in the eyes of the observer. The intent observation on

these opens the minds and hearts of the children and invokes a power of expression on its own and paves the path for the unfolding of the creative genius in the child.

They observe the pattern and design in their immediate environment; in a flower, leaf, leaflet, tree, in insects, sticks, stones, feathers, buds, seeds and seed pods. The children observe the design in each thing. They compare and find the similarities and differences in two similar or different things. The wide and minute observation helps them to discover the hidden pattern in things. They then develop their own design and pattern with various things both inside and in nature. That nurtures their creative faculty.

The planning, observation and evaluation of the 'pattern and design' topic is given below.

### **Aim**

1. To widen the nature observation faculty in the children, so that their busy hands can design beautiful patterns by imitating nature or from their inspiration.
2. To guide children to realize patterns in our everyday life like routine living.

### **Objectives for physical development**

#### **Gross motor development**

- Development of stamina, flexibility, body balance and Jumping skill

#### **Fine motor development**

- Drawing, weaving, stitching, cutting and pasting skill development

### **Objectives for vital development**

- Development of the sense organs

**Objectives for mental development**

- Concentration ability
- Observation ability
- To know the concept of the pattern
- To recognize the pattern in things
- Imagination ability

**Math related objectives**

- Developing the concept of number patterns
- Developing counting
- Ascending and descending series

**Language development objectives**

- Listening skill development
- Vocabulary development like the names of shapes, sizes and expressing concepts
- Expression ability development

**Objectives for psychic development**

- Revealing the secrets of nature and experiencing its beauty

**The Process**

To support the above mentioned objectives, a list of activities was planned for the children.

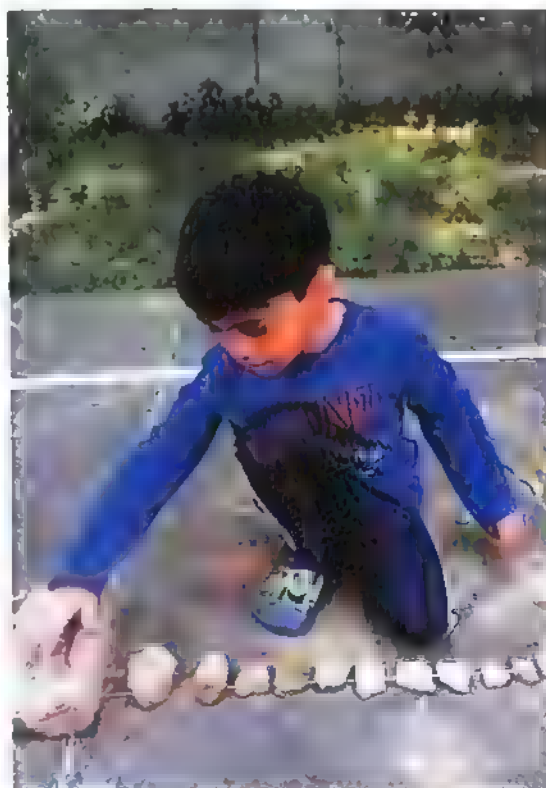
**Activities on the play field**

- One child gives the idea of doing one exercise in turn and the friends follow.
- Running zig-zag through the cones and jumping over the rings with a pattern of open and close movement of legs.
- Doing yoga postures individually and together with a friend.

**Circle time activities**

Playing alertness, quick observation and different pattern related games like

- finding patterns in their friend's clothes, their own belongings and in group materials.
- understanding the pattern as follows:
  - o standing height wise, one tall one short







- o clapping two times, then one time, and then two times
- o one child's hand up and next one's hand down
- o one child claps once, second child says 'Mother'
- o creating number pattern like 1,2,1,2,1,2,1 or 1,2,3,1,2,3,1,
- finding the pattern in two or three friends' action in continuation and able to follow it.
- creating a pattern and the friends follow

#### Discussion questions

- Pattern क्या है? Design क्या है?
- किस-किस चीजों में पैटर्न दिखता है और कैसा दिखता है?
- हमारे अन्दर क्या कोई पैटर्न है?
- क्या दोस्तों के अन्दर कोई पैटर्न आप देख पाते हो?
- ऐसा कोई पैटर्न है जो है परन्तु हमें दिखता नहीं है?

#### Activities in nature

- Spending time in nature and observing minutely the things they come across or of their interest.
- Observing the designs and patterns in the things and describing them.
- Comparing two items.



- Making designs with the things collected from nature.

#### Activities in the skill corners

- Drawing of the designs they observe in nature.
- Making the drawing of things that they see in nature with its respective patterns.
- Making a colorful design with paper cuttings.
- Paper mat weaving.
- Imprinting on leaves, barks and on different rough surfaces and observing the patterns.
- Leaf printing.
- Collage making with colorful papers.



- Exploring with marble printing.
- Doing designs in the dot book.
- Imagining- 'मेरे मन का दीया का pattern'.
- Work sheets on extending the pattern.
  - o filling the space with different designs.
  - o creating design.
  - o creating sceneries out of shapes; circle, spiral, semicircle, rectangle and triangle.

#### Creativity in floor activities

- Making different kinds of designs with different objects like colorful Rangometry, wooden blocks of different shapes and sizes, stones, bottle covers, spoons, seeds, shells and animal toys.
- Observing each other's design and understanding the pattern in one's friend's design and expressing it.
- Creating different designs with the things collected from nature.
- Doing classification with different types of objects.







- Doing matching and ordering with the objects and arranging it according to a chosen pattern.
- Arranging the things in ascending and descending order on the basis of length, size, weight and color intensity.

#### Individual corner activities

- Solving puzzles.
- Playing with picture cards where they have to match the animal with the design on the skin and body parts.
- Arranging the cards according to the sequence of activities.





- Finding the differences in two similar pictures.
- Making different things with the lego blocks.

#### Reflective activities

- Reflecting on things - 'हर चीज़ में सुन्दरता को ढूँढना'
- Expressing their feelings about things around, "मुझे क्या सबसे अधिक पसन्द है?"



## The Process and Observation of a few of the activities

**Activity 1** Circle time discussion to understand the children's rhythm

The topic started with a discussion during circle time. The children were introduced to the term 'pattern and design'. They were asked, "Pattern क्या है, आपको पता है?" The children replied according to their understanding.

Showing a star displayed in the group, one child said, "दीदी देखिए उस star में बहुत माग पैटर्न है, इसे पैटर्न कहते हैं।"

Another child added, "अगर किसी चीज़ में पैटर्न नहीं होता तो वो सुन्दर नहीं दिखता।"

Another child pointed towards a picture of a peacock and said, "मोर का design अंगूर की तरह गोल-गोल दिख रहा है। मोर के निर पर जो है वो वश की तरह लग रहा है।"

**Observation:** The children understand and experience the pattern in their lives and in the surrounding. They could relate with the new term 'pattern and design' through their friends and didis example.

**Activity 2** Nature walk

**Objectives:** They were encouraged to see the varieties of patterns and designs in the nature.

**Observation:** Initially they were observing the patterns of colors in things. They observed the light and dark green color pattern on the leaf of the spider lily and the pink and white colour pattern on 'sadabahar' flower. Gradually they were encouraged to see the different 'shapes' in the things. That helped them to observe more and more. Each one of them came up with numerous observations. It was amazing to see the world through their eyes. An example of a child's expression follows:

मैंने क्या-क्या पैटर्न देखे हैं?

- मैंने गस्ते में मर्कल और पटकोण का पैटर्न देखा।
- घास में zig-zag पैटर्न देखा।
- मैंने पत्ते में जड़ का भी पैटर्न देखा।
- पत्थर में dot-dot का पैटर्न देखा।
- कूड़ेदान में square shape का पैटर्न देखा था।
- Net में square shape पैटर्न है।
- नीम पत्ते में zig-zag पैटर्न है।

- Basket ball court में square पैटर्न है।
- मोर का पंख में रंगो का पैटर्न है।
- फूल के अन्दर गोल-गोल का पैटर्न है।
- चिड़िया line से उड़ रहे हैं।
- घास line में लगी है।
- वारिश में line का पैटर्न है।





**Activity 3** In the group, the children were encouraged to draw the picture of different patterns and designs they saw in nature.

**Objective:** To develop the ability of observational drawing skill and to be able to describe them

**Observation:** Many children could draw the exact pattern they saw in nature. It was interesting to see their confidence to express their mental images/perceptions through drawings. A few examples are given below:

- ये Purple color का फूल में petals का पैटर्न है।
- गिलास में color का pattern है।
- V shape stick और straight का pattern है.
- एक पेड़ है जिसमें hole-hole का pattern है.

- सहजन की पत्तों में बीच में line और दोनो तरफ गोल-गोल पत्तें हैं।
- ऊपर-नीचे का पैटर्न पानी में, पेड़ों में, पहाड़ों में और बादलों में देखा।
- बादल में ऊपर-नीचे लाईन का पैटर्न है। फूल में पेटल की पैटर्न है। तितली में star की पैटर्न है। इन्द्रधनुष में रंगों का पैटर्न है। पानी में मछली का पैटर्न है। पेड़ में पत्तों का पैटर्न है। दीया में yellow और orange का पैटर्न है।



**Activity 4** Playing alertness games related to pattern started by diyas.

This game started with a simple pattern of 'two times of clapping and two times of tapping hands on the thigh' and later complex patterns were added by observing the readiness of the group.

The patterns were as follows:

- o Two taps on the thighs followed by one clap
- o One tap on the thighs followed by three claps.
- o One child says "one", the next child claps 2 times; the third child says, "three" and fourth child

claps 4 times and the game progresses in this way with the mention of numbers in increasing order.

**Objectives:** To understand the 'pattern' and to follow the action.

**Observation:** The children took interest in alertness games. In the beginning, one or two children took time to follow each of the rhythm games, but later they could understand and follow the games through. The children could also follow the three step complex pattern in the clapping game.

**Activity 5** Circle time pattern games, starting with the children.

**Objectives:** Children to create as well as follow a pattern of actions.

#### 1st game (1-1 pattern)

Action one was a flower action and the next one was clapping. Many times this game was played with varieties of action which started with two children and others were following it, then two other children were starting. Like this game was played.

**Observation:** The children who were starting were more confident and attentive. Others could follow the action with full understanding.

#### 2nd game (2-1-2-1 pattern)

One of the diyas explained that इस खेल में दो दोस्त एक तरह action करेंगे और तीसरा दोस्त एक नया action करेगा। इस तरह से हम आगे बढ़ेंगे।

**Observation:** Initially the children could not follow the game. After playing it several times, they understood the patterns in the action and could follow

the sequence of patterns in action.

#### 3rd game (telling words in 1-1 pattern)

One child said one word, "pani", the next child said, "hawa", the third one said, "pani" and the pattern followed.

**Observation:** All the children understood the game at once except one child, who was helped by his friends and who later understood.

#### 4th game (1-2-3 pattern)

1st child said, "one" and clapped once, 2nd child said, "two" and tapped twice, the third child said, "three" and clapped three times, the fourth child said, "four" and tapped four times. Like this in one turn they had to clap and in the next, they had to tap on their thighs.

**Observation:** The game was good and every one followed nicely. In between two children could not concentrate; they forgot and broke the rhythm and later resettled again.

## Activity 6 Doing worksheets on extending the pattern.

The worksheets given were from a simple to a complex level.

### Objectives

- To understand the pattern in the picture and extend it through drawing.
- To know the different kinds of patterns.
- Drawing skill development.

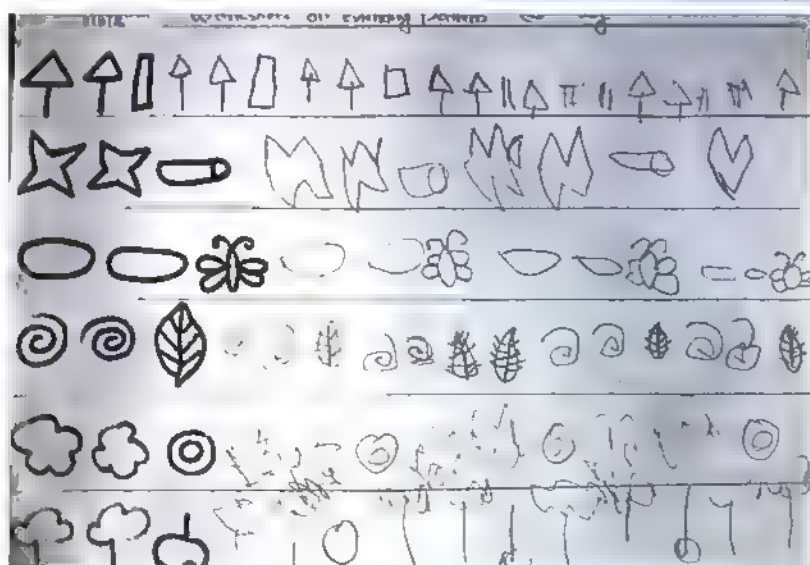
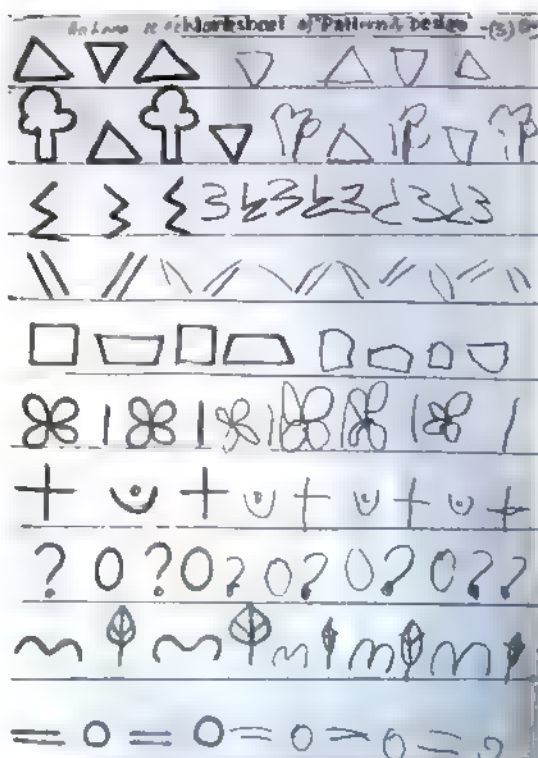
Observation: All the children liked to do these worksheets. They could concentrate and complete their work quietly. Most of the children could understand and followed on their own. Some children struggled to repeat the drawings of the pattern with pencil.

Some of the children's conversations while doing the worksheets:

यह तो बहुत ही आसान है। मुझे तो स्टार बनाना आता ही नहीं है, मैं कैसे बनाऊँ? दूसरे बच्चे उनको बोलते हैं, "तुम्हें जैसे आता है वैसे ही बनाओ।"

Though they recognised the patterns,

some could not draw them as it was difficult for them to translate their recognition into pictures. Some of the children's worksheets were not clean and neat. Because of the different kinds of angular drawings, some of the children could not do the more complex one.





### Activity 7 Doing work sheets on creating patterns.



#### Objectives

- To understand the child's capacity to draw different patterns.
- To develop the ability to create one's own designs and patterns.

Observation: All the children created their own understanding of colour patterns on the given pictures. Many



children made new patterns which they normally do not make, like spirals, dot-lines, circles, stars, zig-zags, heart shapes, flowers and semi circles.

### Activity 8 Making mala with beads.

#### Objective

- Stringing the beads in a pattern of their own.

Observation: A Few children could make the mala with the understanding of the pattern shown by didi. Repeating the

same pattern was difficult for a few children. They needed didi's guidance from time to time.

Changing patterns was challenging for the children. A few children managed to complete the chosen sequence of patterns.

### Activity 9 Making a colourful bracelet with beads according to the pattern given.

#### Objective

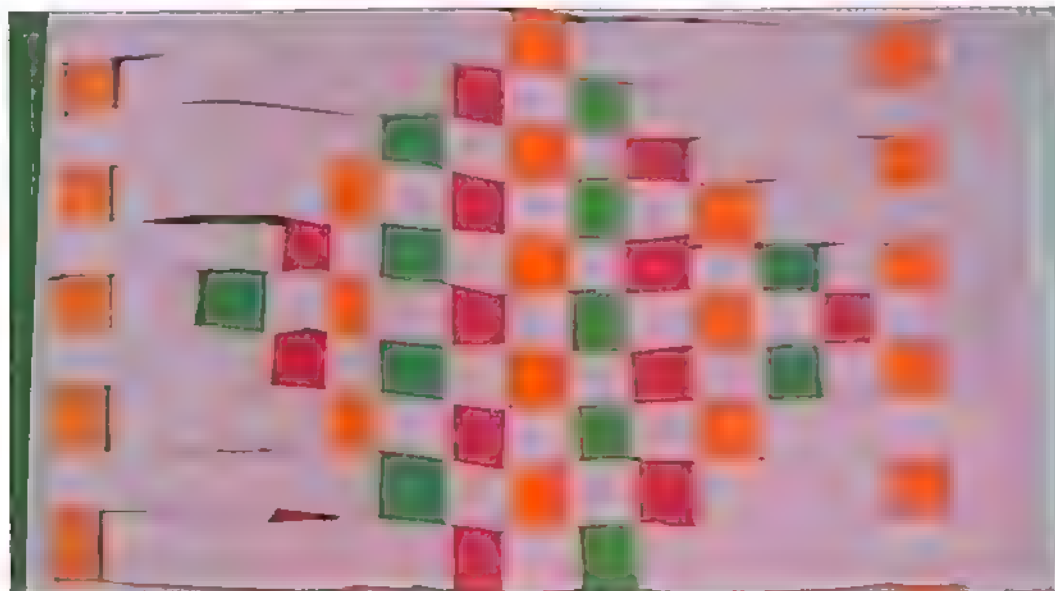
- To concentrate in order to understand the pattern.

Observation: Most of the children could concentrate in their work. They understood the pattern of the beads already started, and completed the bracelet. A few children created new patterns with Didi's help.

**Activity 10** Paper mat weaving**Objectives**

- To know the skill of paper mat weaving.
- To understand the pattern and continue it.

**Observation:** Most of the children could follow the process of the mat weaving. They were happy to see the pattern created by themselves.

**Activity 11** Making the design of a scenery with paper cutting

**Objectives:** To develop hand skill and creativity



**Observation:** The children were very involved. Each one of them did the work independently. They could cut different designs like zig-zag patterns and motifs of grass, sky and mountain.

### Activity 12 Making patterns on paper with color pencils

#### Objective

To be able to draw patterns on their own.

Observation: All children were making pattern design from their own ideas. It was interesting to observe the varieties in their patterns. The description of their drawings revealed their inner world.

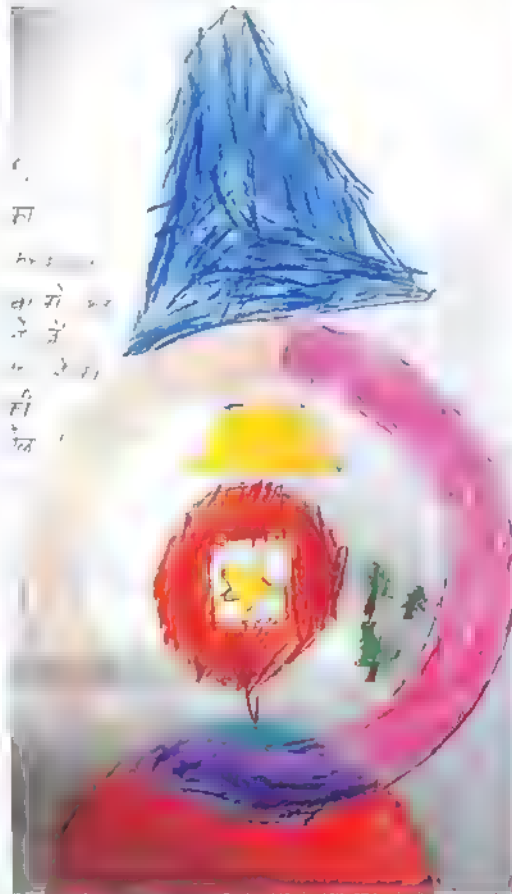
Here is an example:



गोल pattern चादर है। (top)

Following the worksheet

ये rocket है, rocket में पेड़ का pattern है। ये Christmas rocket है। ये हवा में जो भगवान होते हैं उनको जाकर वालता है कि आप मांग वच्चों को देख रहे हो। ये वालकर फिर नीचे आ जाते हैं।



Designing own name



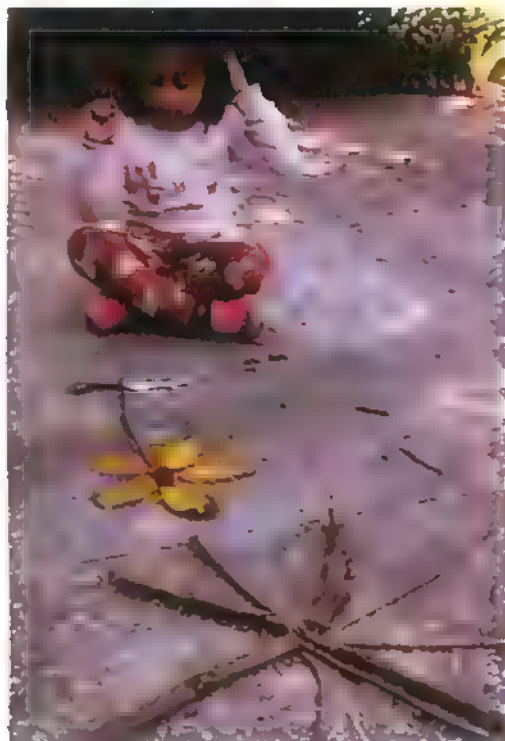
**Activity 13** The children made patterns and designs on the floor with the materials from the group.  
Objective: To develop creativity.

Observation: All children could make a pattern/design with interest and they described it.



**Activity 14** The children made patterns and designs on the floor with things collected from nature.

**Objectives:** To encourage creativity with things collected from the nature.  
**Observations:** All children were involved in the activity and made beautiful designs with interest.

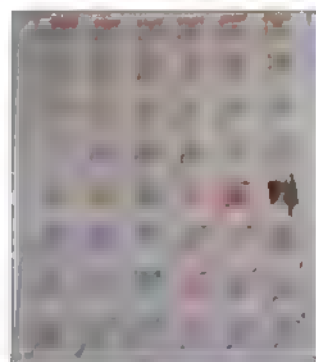


**Activity 15** Making patterns in the 'Dot book'.

**Objectives:** To be able to see patterns through dots.

**Observations:** The children took interest in the dot book. Initially they were observing and following the design.

Later they made their own designs while joining the dots. They used color pencils and made colorful designs with interest. They could concentrate and complete half a page. Some children did not want to do repetitive work; they created more designs.



**Activity 16** Making Rangoli with the flowers.

**Objectives:** To be sensitive with the flowers and to develop creativity.

**Observations:** The children were admirably engaged in making rangolis. They did these individually and as a group too.





**Activity 17** Rhymes created by the children.

Objectives: Language development and thinking ability development.

Didi was telling a story to the children. In the story, the river was flowing beautifully singing 'gala gala sala sala gala gala salaa....' and in the rain grasses were dancing 'thai thaka thai thaka thai...'

Didi asked the children, "how are the

other characters singing?" The children's response took the form of a song:

हवा वहने लगी साएं साएं साएं साएं  
पत्ते गीरने लगे टप टप टप टप  
देखो देखो वारीश होने लगी छम छम छम छम  
घादल बोलने लगा घड़ घड़ घड़ घड़  
देखा देखो मोर गाने लगा काउं काउं काउं काउं  
डक बोलने लगा कोआक कोआक कोआक कोआक  
देखो देखो बच्चे गाने लगे हम सारे दोस्त हैं ।

**Activity 18** Similarities and differences between the leaf of the banyan tree and the peepal tree

The children were encouraged to observe the patterns and designs on both the leaves carefully and were encouraged to express about the similarities and differences individually.

Objectives

- To develop the observation ability
- To be able to express with clarity

Observation: Each one of the children could express 5-6 points in each category. They were able to express themselves in complete sentences. Some children were giving the factual report while others were adding their perception of it.

The expression of one child is given below:

**Similarities**

- 1। दोनों के नीचे जो टांग है वो थोड़े काले हैं।
- 2। दोनों के नीचे जो टांग है वो समान लगता है।
- 3। दोनों लेट जाते हैं और लेटे लेटे उलटा भी हो सकते हैं।
- 4। दोनों का रंग हरा है।
- 5। दोनों को खड़ा करके उलटा कर सकते हैं।
- 6। दोनों पत्ता के दोनों तरफ खुला है।

**Differences**

- 1। पीपल का पत्ता को खींचो तो hard लगता है, ताकत उसमें लगती है। वरगद का पत्ता को छू के देखो तो आराम से खींच सकते हैं।
- 2। पीपल का पत्ता के ऊपर, बाल के जैसे लम्बा है और नीचे पूंछ है। वरगद का पत्ता के नीचे एक टांग है, जिसमें वो खड़ा है।
- 3। पीपल का पत्ता में सीधा lines है, वरगद का पत्ता में टेढ़ा-मेढ़ा lines है।
- 4। पीपल का पत्ता के बीच में जो डंडी है वो पतला है, वरगद का पत्ता के पीछे जो डंडी है वो मोटा है।
- 5। वरगद का पत्ता का टांग मोटा है, पीपल का पत्ता का टांग पतला है।

**Activity 19** Reflective questions to observe the pattern within

**Objectives:** From the observation of the outer patterns in the environment, the children were encouraged to see the pattern within them. Sometimes, after telling a related story, the children were encouraged to express their deeper feelings. To different children, different questions were asked. For example, 'आप को कब खुला लगता है, कब-कब वन्द लगता है?' 'आप के अन्दर क्या-क्या अच्छा है, क्या अच्छा नहीं है?' 'आप कब खुश होते हो, आप कब उदास होते हो?' 'आपको क्या-क्या करना आसान लगता है? क्या-क्या करना मुश्किल लगता है?'

**Observation:** The children started observing the pattern in them and expressed from within. One child was asked,

"आपको कब खुला लगता है, कब-कब वन्द लगता है?"

He replied "मुझे खुला लगता है जब मैं सूरज के पाम खड़ा होता हूँ क्योंकि जब ठंडी का दिन होता है, गरम-गरम रोशनी लेने के लिए। गरमी के दिन मन करता है कि पंखा के नीचे रहना। मुझे खुला लगता है जब मैं किसी से दोस्ती करता हूँ और मेरे ज्यादा दोस्त हो जाते हैं और हम मिलकर खेलते हैं।

मुझे वन्द लगता है जब कोई मेरे साथ दोस्ती नहीं करता या कोई दोस्त भारा-मारी करता। जब पेड़ और पौधे सूख जाते हैं उनके पत्ते भी सूखा-सूखा लगता है।"

**Activity 20** Reflective questions to observe the patterns in friends.

The children knew each other very well and played with each other according to their interests. Didi asked the children, "आप रेड गुप से दोस्त हो, किस-किस वच्चे के साथ आप का दोस्ती नहीं हुई है परन्तु आप करना चाहते हो, उनके बारे में बताओ?"

Another child responded to the question 'आपके अन्दर क्या-क्या अच्छा है, क्या अच्छा नहीं है?'

He expressed it as a conversation with his inner friend, "मेरे अन्दर का दोस्त बोलता है कि आप चप्पल पहनकर जाओ तो आपका पाँव ठीक होगा। मैं कभी-कभी, कुछ-कुछ काम अच्छे से कर पाता हूँ, जैसे drawing करना, coloring करना। कभी-कभी पापा-मम्मी की बात सुनता हूँ और हर समय कोशिश करता हूँ कि मैं अच्छा बन जाऊँ। मेरे अन्दर जो अच्छा नहीं है...मैं कभी-कभी गन्दी बात करता हूँ। मैं दोस्तों के ऊपर हँसता हूँ। जब कोई दोस्त गिर जाते हैं तो मैं हँस देता हूँ।"

Another child responded to the question, 'आपको क्या-क्या करना आसान लगता है? क्या-क्या करना मुश्किल लगता है?'

"मुझे drawing करना अच्छा लगता है क्योंकि मुझे अच्छे से color को भगना आता है। मुझे पौधे को देखना अच्छा लगता है, मुझे अच्छे से पौधे को पानी देना आ गया। मुझे सबकी मदद करना आसान लगता है।"

मुझे क्या-क्या करना मुश्किल लगता है? "मैं पूरा track round नहीं लगा पाती हूँ क्योंकि मैं जल्दी थक जाती हूँ। मैं बड़े-बड़े puzzle अपने आप पूरा नहीं कर पाती हूँ। मुझे paper folding से star बनाना मुश्किल लगता है जब मैं fold करती हूँ तो वो खुल जाते हैं। मुझे सब्जी खाना मुश्किल लगता है।"

**Objective:** To express their observations about their friends.

**Observation:** One child said, "मैं P से दोस्ती करना चाहती हूँ। रेड गुप से मैं देख रही हूँ कि P बहुत S के साथ खेलता था और मेरे साथ कभी नहीं खेलता था तो मैं P से दोस्ती करना चाहती हूँ। P जब कोई काम करता है तो अच्छे से करता है और दीदी की बात सुनता है।"

**Evaluation of the topic**

Since the beginning we had observed the children's interest in making patterns and designs with the group materials.

Some would make designs with things like shells, red seeds, blocks of different shapes and sizes, colorful sticks, wooden rings and shiny stones while others would make them with the Lego blocks. Whatever they used to make, there was always a story behind their creation.

The topic of 'pattern design' developed the observation power of the children. Nature gives ample opportunity to develop this faculty in each child. During their nature walk, initially children were more focused on the colors and shapes of the things. Slowly, they could see the patterns and designs, patterns inside the designs and also designs inside the patterns. Children were joyfully engaged

in the process of finding out the secrets of nature. They used to share their joy with each other and with the Didis.

The process of observation helped the children to express their creativity in a wider and deeper way. They started making bigger designs, including many stories in it. The beauty and the complexity of the patterns were also observed in their art and craft related work.

The Mother says, "...the finest present one can give to a child is to know oneself and to master oneself." Finally, the topic helped the children to observe themselves, their own pattern of behavior, responses to the people and situations. They expressed about themselves, their strengths and the weaknesses.

*Reflection by the Diyas*

This was my first year as a Diya, and for me also this was the first time I was working on a project like this. I had prepared the topic related activities, worksheets, samples of different hand skill work so that children could get different experiences. More important for me was to relate to the inner aspect of my own being.

As the children learned and saw designs, I too began to see shapes and designs. I began to feel connected and was also able to see beauty in everything. I started to ask

questions to myself, trying to understand my own inner patterns before asking the children about their inner patterns. How I think, how I talk, how I relate with each child, and with my group partner were some things I looked at. I understood that there is a pattern in my life and I am able to know and be aware of it and make progress on it.

I was able to achieve my planning objectives but not fully because of lack of time due to festive events and others. The project may have been over but the relationship with patterns continues both in the children and in me.



## Grass

### **The beginning**

*The children bubbled with excitement when we regrouped after the summer break, their enthusiasm matched only by the pitter-patter of the monsoon rains. When prompted, they were quick to notice the changes that had occurred while they were away. We started a conversation around what changes they saw in the school and the campus. Their attention was captured by the lush, green carpet of untrodden lawn grass and the tall clumps of elephant grass which had flourished in the monsoons.*

*We used their natural interest in the greenery, particularly the grass fields, as a springboard to float the idea of a project on grass through which we intended to provide an immersive, sensory experience of the natural world and to create a context for them to present observations and externalize their feelings and thoughts through language.*

## Aims

*What were the group needs and how these were covered in the project?*

The overarching aim of the project was to nurture a loving relationship with nature. The context of the project segued well with the emergent needs of the group at this stage in the physical, mental, vital and psychic domains:



- Manipulating materials to fine tune gross and fine motor skills and enhancing sensory faculties of touch and smell.
- Developing the ability to observe, sort, group, and classify natural objects in order to discover interconnections and using appropriate language to capture and share experiences.
- Igniting curiosity towards the diversity in nature, fueling imagination around the context, and stimulating creative thinking via the medium of poetry and storytelling.
- Inculcating awareness and sensitivity towards the natural world through authentic experiences with natural materials and beings.

*How did the children construct the inquiry? How did the children become independent?*

The children conducted the inquiry by experiencing the grass lawns and fields. They collected different types of grasses, made craft objects and spoke about what they felt through stories and group discussions. They composed poems, learnt songs and told stories.

## Preparing the physical environment

The physical set up of the group at the launch of a new project is like an epigraph to a book. It not only suggests the theme but also invites enthusiasm and engagement from children.

We decorated the group with a variety of grass and their flowers. The display board was designed to show pictures of grass and greenery in general. Along with it, we put up flashcards of key vocabulary such as घास, हरा घास, घास के फूल, मोटा घास, पतला घास, लम्बा घास, छोटा घास। We showcased the books made by children in the previous year to pique interests further.

## Objectives for physical development

The activities in the physical domain aimed at developing stamina, body control, and flexibility among the children.

**Activities:** Each day, the morning sports hour centered around achieving the physical goals for the group in the context of the project theme.

- We did a variety of exercises with children that involved bending down and touching the grass, mimicking the movement of the grass by swaying from side to side, jumping, running and stretching on the grass.
- We played games like yellow tiger-white tiger, chain game, dog and the bone, pakram-pakrai in the grass fields drawing the children's attention to the grass.
- Children jumped on mounds of cut

grass, rolled, and crawled in the grass.

### Objectives for vital development

The activities in the vital domain were focused on introducing the children to a sensory awareness of nature through touching, feeling and smelling grass, garnering appreciation for rhythm and harmony by chanting sanskrit shlokas and singing songs on grass and nature, and nurturing love and sensitivity towards nature.



### Activities:

- Children learnt a new sanskrit song on nature.

पितं पुष्पं, रक्तं कमलं, श्वेतः दुग्धं, हरितः घासं  
कालः काकः, स्वर्णः सूर्य, नीलः सागरम्, रौप्यः चन्द्रः

The shloka was chosen to expose them to positive, conscious music and to help center and quieten the mind.

- Children learnt an English song  
“Green grass grew all around”.  
In the ground, was a hole, the prettiest  
hole you see,  
Hole on the ground,  
And the green grass grew all around,  
all around and the green grass grew all  
around  
In the hole, was a sprout, the prettiest  
sprout you see,  
Sprout in the hole, hole on the ground,  
And the green grass grew all around, all  
around and the green grass grew all  
around.

- They created a song about grass as a group. Metaphorizing grass as hair of Mother earth and the various ways it nurtures insect and animal life along with humans, was a way of generating respect for the smallest of life forms.

घास हमारी प्यारी घास, धरती माँ के हैं ये वाल  
घास हमें देता है शक्ति, घास मिट्टी को पकड़कर रखती  
छोटे-छोटे कीड़े धीरे-धीरे आते, घास उनको छाया देते  
घास जानवरों को खाना खिलाती, धूल उड़ने नहीं देती  
घास के ऊपर चलने से अच्छा लगता  
और लेटने से मुलायम लगता  
हाथ लगाने से ठंडा लगता  
घास का भी फूल होते हैं  
घास के फूल जब सूख जाते हैं  
उसमें बीज निकल आते हैं  
घास को घोड़ा, गाय, बकरी खुशी से खाते हैं।

Children listened to stories such as ‘Hiran aur ghaas ki dosti’ and ‘Ghaas ki Madad’. The stories aimed to invoke empathy for grass and realize that they are also living things. This helped them stop uprooting the grass while sitting in the fields.



### Objectives for mental development

The activities in this domain were orchestrated around children's natural inclination to make sense of the world around them by creating rudimentary ordering systems. Most activities aimed at developing the core faculties of concentration and observation which enabled children to differentiate between different classes or groups by comparing and contrasting— eventually culminating into sorting and organizing. Another critical developmental goal was to nurture individual expression and facilitate the acquisition of suitable language to articulate and share thoughts.

### Activities

- We organized a field trip where children observed and collected different types of grasses. They used informal measurement tools such as their fingers, handspans and their own bodies to estimate and compare the

length of different types of grass. They were included in decision making and problem solving processes through scaffolded conversations around measurement.

### Conversations by Children:

Children independently engaged in a conversation around grass varieties and their characteristics based on their observations as well as previous knowledge. They tried to logically identify and differentiate between them using criteria which they thought were important. Here's one such excerpt:

Child 1: यह घास नहीं है। यह बाँस है।

Child 2: नहीं यह बाँस नहीं हो सकता है क्योंकि बाँस कम से कम पाँच centimetre का मोटा होता है।

Child 1: तब यह lemon grass है।

Child 2: घास को छूने में कनिष्का का हाथ थोड़ा कट गया है। ऐसा lemon grass में होता है।



## *Observations by the Diyas*

Children were very excited when they reached the grass field. They ran around, jumped, rolled, and even lay down on the grass. A few went ahead to compare their height with that of the elephant grass. They noticed the height, color, and thickness of different grass varieties. A few even dug up the soil to observe the roots. They pointed out that insects and other living things such as mushrooms thrived in the grassy patch. We allowed them to explore a little bit such that they

experienced nature in an integrated way. We also took the opportunity to structure a discussion around the benefits of walking bare feet on the grass. Eventually, we regrouped to focus their attention on the objective of the visit. They then proceeded to collect samples of different grass types. When we came back to the front lawn, children tried to distinguish between soft lawn grass and wild grass. They then pasted the different grasses on a sheet of paper and labelled them collectively as “घास”.



Children used informal measurement tools such as their fingers, handspans and their own bodies to estimate and compare the length of different types of grass





Children went on another field trip, this time to observe grass flowers. We introduced the activity by initiating a discussion around flowers. Children were interested in talking about the flowers such as the rose that they have seen. When queried if they had ever seen a grass flower, they replied in the negative.

We all grouped to explore the area near the open stage for grass flowers. Children collected the chipku grass flower as they found it fascinating. They also collected a variety of other grass flowers. They used the power of observation to compare and classify the flowers.

Next, they came back to the group to make animal shapes of their choice with the chipku flowers and pasted the figures on a sheet of paper.

This gave them a chance to hone their fine motor skills. The final stage of the activity aimed at developing children's imagination and articulation. They used their animal figures to piece together a story wherein each child contributed a sentence. The story went like this:

घास की फूलों से बनाई गई जानवरों की कहानी

दीदी: एक जंगल था। वहाँ पर बहुत सारे पक्षी रहते थे और फूल भी लगे थे।

आ: वह जंगल बहुत घना था। वहाँ पर दो तितलियाँ रहती थीं।

प्र: वहाँ तितलियाँ खेलती थीं।

अ: कुछ लोगों ने जमीन पर बहुत सारे फूल उगाए थे।

अ: जंगल में बहुत सारी गिलहरियाँ थी।

उ: वहाँ बहुत पेड़ थे इसलिए वहाँ ठंड थी।

नी: तितलियों ने फूलों का रस पिया था।

क: दोनों तितलियों को मछलियाँ और पत्थर दिखाई दिए।

प: तितलियों ने मछलियों के साथ दोस्ती की।

नि: तितलियों ने मछलियों को खाना खिलाया और अपने आप खाया।

सा: तितलियाँ वहाँ से फल लाई और मछलियों को खिलाया।

क: चिड़िया आई और उसने तितली से पूछा- तुम मेरे से दोस्ती करोगे?

सु: घने जंगल में बहुत सारे पेड़ थे।

उ: पेड़ों पर वाग्श की वूदें गिरने लगती थी। गिलहरी वाग्श की वूदों से भीग गई।

दीदी: हमे समूह के बच्चों को जंगल में बहुत अच्छा लगा। वे वहाँ पर खेलने कूदने लगे।



Another day the children were encouraged to walk bare feet on the grass, sit on it, touch it, and also lie down on it. There were mounds of freshly cut grass all around. They jumped and rolled around on these freely, touching, feeling, and smelling its sweetness.

This activity aimed at stimulating children's senses as they interacted with their environment with awareness. We hoped this would have helped them form a bond with nature.

### *Observations by the Diyas*

Barring one child, everyone loved the activity. It was a new experience for this one child. She felt that the grass was pricking her soles. But the next time we went to the field, she joined the others in walking on bare feet and crawling around. She enjoyed the feel of the grass and exclaimed that she was feeling brave.



Students wove a story imagining what would happen if grass were not green in color. The aim was to help them reach beyond their immediate sensory experiences and engage creatively with a make-believe situation. Here are two stories that children created."

"अगर घास का रंग गुलाबी होता तो ऐसा लगता कि गुलाब के फूल ने उसे अपना रंग दे दिया है। जब वच्चे गुलाबी घास पर चलेंगे तब उसके पर भी गुलाबी हो जाएँगे। अगर वच्चे गुलाबी घास पर बैठेंगे तो वो भी गुलाबी हो जाएँगे।"

वच्चे अपनी चीजों को गुलाबी घास पर डालेंगे तो वे चीजें भी गुलाबी हो जाएँगी। जब वे घास को पानी से धोएँगे तब पानी भी गुलाबी हो जाएगा। जब वच्चे उस पानी में नहाएँगे तब वे वच्चे भी गुलाबी हो जाएँगे।"

"अगर घास पीली होती तो गाय अगर उसे खाती तो वह भी पीली हो जाती। घास पीली होती तो वह गरम लगती। मारि धरती पीली लगती। पीली घास पर पेड़ लगने से वे भी पीले लगते। पीली घास होने से जमीन के अंदर गरम-गरम हो जाता जितना गरम जमीन के नीचे है। पीली घास के कारण धरती पर भी शक्ति है।"

### Discussion about Grass

We did this activity to consolidate children's knowledge about grass—both personal as well as what they had learnt as a group during the course of the project. The aim was to make them express their experiences in a coherent way and communicate with each other. Here's a snapshot of the thoughts children shared:

घास के बारे में कुछ जानकारी

- 1। घास हल्का हरा और गाढ़ा हरा रंग के होते हैं।
- 2। हमें घास मुलायम होते हैं।
- 3। सूखे घास चुभने वाले होती है।
- 4। कहीं-कहीं घास छोटी होती है।
- 5। कहीं-कहीं घास लम्बी होती है।
- 6। सूखी घास पर पानी डालने से वह फिर से हरी हो जाती है।
- 7। घास की आयु बहुत लम्बी होती है वह कभी मरती नहीं है।
- 8। घास पर चलने से आँखों की रोशनी बढ़ती है।
- 9। घास मिट्टी को पकड़कर रखती है।
- 10। घास वातावरण को शुद्ध करती है।
- 11। घास जानवरों का भोजन भी होता है।
- 12। घास छोटे-छोटे जीव जन्तुओं का घर भी होती है।

The focal point of the culminating activity in this theme was the assimilation of key

vocabulary learnt by the children. They read aloud the words displayed on the bulletin board and copied those down on a sheet of paper.

The words that they learnt were:

घास, हरा घास, घास के फूल, मोटा घास, पतला घास, लम्बा घास, छोटा घास।

### Initial Mathematics

- Counting with one to one correspondence up to 50 number of beads/things.
- Addition until 10 numbers with objects.
- Estimation on numbers.

### Activities

- Counting the objects; like grass, leaves, ganitmala and sticks.
- Doing addition with the word problems.
- Estimation game with dots, picture and grass.

### Objectives for psychic development

The psychic goal for both the diya as well as the children was to enjoy work and feel happy about it. Another was to be in touch with Nature and form a loving bond with Her.

### Challenges and Scope for improvement

A few children were still finding it difficult to stay focused and complete the task. They had to be very frequently reminded about what they had set out to do. If we were to do the project again, we would plan better for differentiated facilitation. Further, we would aim at a stronger integration of mathematical skills in the project.

### Overall Evaluation

The children in the group are at a stage where they are just learning to increase their attention span, follow instructions, and complete tasks independently. The project helped them to work towards set goals while dealing with distractions in the environment.

They have begun to understand the importance of grass and are more sensitive to it. They love to play barefoot in the grass and have stopped uprooting grasses mindlessly. In this process, they have become more aware of their natural

environment and they now notice small creatures and insects more frequently.

The children are also able to differentiate between cultivated and wild grass and can recognise several grass flowers. They are able to express and share their thoughts more cogently and work in better harmony.

There was in children a strong affinity to nature. It appeared as if something from within them invoked nature spontaneously. Nature too invoked in them a deep seated joy. It was a mutual reciprocation in felicity.





## Statue making

### **The beginning**

*Every year, as part of their green group journey, children make murtis (statues) for Durga Puja. The weather is perfect for working with clay and it is also in keeping with the tradition of making divine idols for the worship of Durga. Mirambika is in celebration mode and the children are happy to be a part of this festive atmosphere by contributing their own statues.*

### Aims

- To develop gross and fine motor skills.
- To hone observation and concentration powers.
- To develop a sense of beauty and creativity with clay.
- To become part of the festive atmosphere and know more about Indian culture.

### Physical Environment

- Organization of the group with topic-related objects and word display: आधार, रस्सी, मिट्टी, पुआल, कपडा, हथौड़ा, छलनी, तूलिका, रंग।
- Decoration of display board with pictures of deities and topic-related songs.
- Display of different kinds of statues made of clay, wood, plastic and plaster.
- Daily observation of the statue of Sri Aurobindo on the Sunlit Path.

### Objectives for physical development

- Developing motor skills.
- Increasing hand strength.
- Strengthening hand-eye coordination.

### Objectives for vital development

- Developing the faculties of touch, smell and sight.
- Inculcating the love for working with,

touching and feeling clay.

- Inculcating the love of making and painting statues.
- Singing songs related to body parts.
- Chanting verses about Durga.
- Acting like statues.
- Listening to stories about Gods and Goddesses.
- Learning about how different statues are made with different materials (clay, wood, plastics, plaster)

### Objectives for mental development

- Developing concentration, observation, thinking, imagination and expression.
- Developing the skills of reading, writing and thinking.
- Developing the ability of mathematical calculation.
- Developing decision-making skills.
- Learning the process of making a statue, step by step.

### Objectives for psychic development

- Being happy, always.
- Enjoying the work we do.
- Developing the sense of beauty and aesthetics.
- Being in touch with inner divinity.
- Being in touch with the earth.



**Activity 1** Listening to a story and discussion about statues

**Objective:** To understand the relevance of what they were going to do and to develop imagination

The diya told the children stories every morning and showed them divine statues made of different materials, such as clay, wood, plastic, and plaster. She asked them where they had seen idols of gods. The children recalled seeing statues in temples, pandals and parks. We discussed how different statues are made using different materials. The Diya narrated the story of the

wooden idols of Jagannath Puri. Children were asked to observe statue making in their neighbourhood at that festive time.

**Resources:** Collection of statues made out of different materials

**Evaluation:** All the children listened to the stories carefully, and asked the meanings of difficult words. They also touched and observed the statues. They shared anecdotes about some characters from the stories, through earlier experiences. One child said, "Didi, when I go to the temple I see God."

**Activity 2** Making a sketch for the statue

**Objective:** To think and decide which statue they wanted to make (important for the children as they would work with their statues for nearly a month). The diya asked the children to think about whose statue they would like to make and why. All the children gave the subject some thought and decided on different statues.

S excitedly shared, "I will make

Radhaji!" Then she changed her mind. "I will make my brother!"

K said, "I will make Ganeshji as he likes laddoos and so do I."

A said, "I will make Kali Ma, as she is powerful and she will remove all bad things. I will make Shivji under Kali's foot as I have seen her statue like that."

After deciding, the children drew pictures of their statues on paper.

**Resources:** Paper, pencil, crayons  
**Expected Evaluation:**

- Articulating what statue they want to make
- Clarity in making a choice
- Drawing proper shapes

**Actual Evaluation:** The children were able to express and draw what they wanted to make. They could explain the reasons for their choices. The children drew and coloured the pictures beautifully. Their drawings were quite detailed, capturing the finer aspects of the personalities of the gods, such as their accessories, weapons and chosen vahanas. Some children could not draw too well or colour in the pictures neatly.





**Activity 3** Breaking hard clay to prepare it for kneading

**Objective:** To develop hand strength, concentration and hand-eye coordination

The diya arranged the materials in the space near the library. Children were given pieces of newspaper, clay, sieves and hammers. They were asked to pound and grind the clay and run it through the sieves to obtain fine particles.

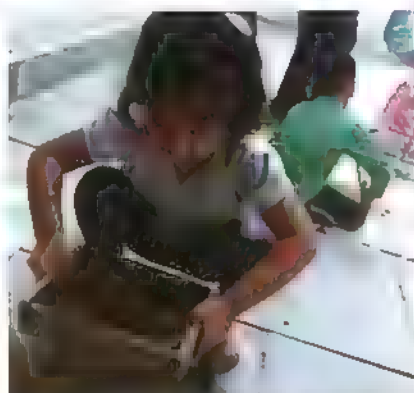
**Resources:** Newspaper, hammer, dry clay, sieve, pot to keep sieved clay

**Expected Evaluation:**

- Holding the hammer (how much effort is the child putting in)
- Handling the sieve
- Concentration level
- Touching the sieved clay and feeling it
- Hand strength

**Actual Evaluation:**

Everybody was interested in pounding the hard clay. Some children exerted their full strength to pound it. Others pounded it more gently. Some tried to make a fine powder while others left it somewhat coarse. P was exceptionally good at both pounding and sifting. Most children needed Didi's help in sieving the clay. All the children liked touching and smelling the clay. Some children helped Didi wind up the materials after the activity.



**Activity 4** Creating basic shape of the statue with straw (*puaal*)  
**Objective:** To improve concentration and hand skills

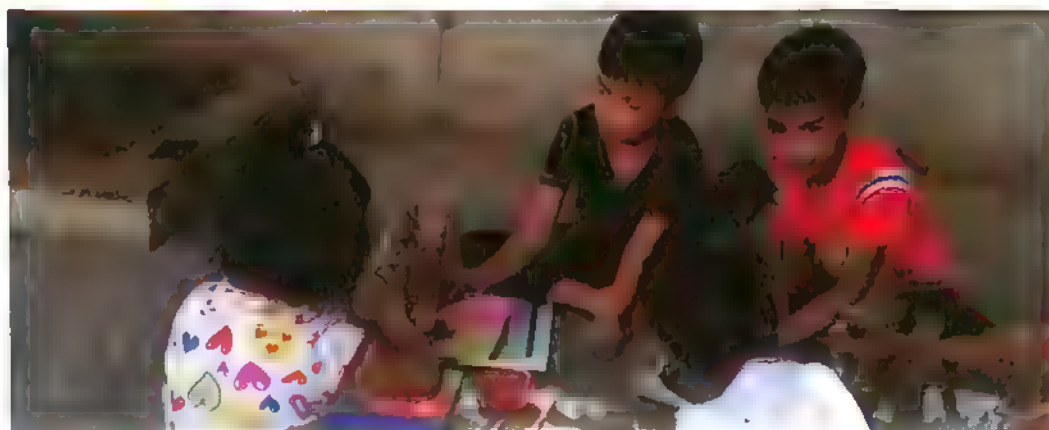
The Diya kept the hay ready and showed the children how to hold it together around the wooden stand and bind it with rope.

**Resources:** Thread, straw, wooden frame

**Expected Evaluation:**

- Interest of the child
- Ability to tie the knot

**Actual Evaluation:** Children were keenly interested in making the anchor with the hay but they needed help. They were curious to know what hay or *puaal* is. The Diya explained what it was and where it came from.





**Activity 5** Adding wet clay to the statue base

**Objective:** To develop concentration and hand skills

On one day the Diya brought clay powder prepared by the children in container and asked the children to pour some water from their water bottles into the dry clay before leaving school. The next day, when the children were back, they were asked to touch and smell the wet clay. The children were delighted to see the mixture. Some said it was like keechad (mud), another said it was like gobar (cow dung). They were then told that they would use it to make their statues. They took portions of the semi-wet clay and mixed it with more water to get the desired consistency, as shown by the Diya. The Diya demonstrated how to wet the frames and start putting wet clay on to the statue base. The children started the work with love and joy.

**Resources:** Pot, water, newspaper, model of statue, clay

**Expected Evaluation:**

- Attention span
- Relationship with clay
- Independent work
- Children's interest

**Actual Evaluation:** All the children got busy smearing clay over the statue, soaking their hands in water and patting lumps of clay onto the statue. They slowly moved their fingers to smoothen the shapes of the body parts of the statue. Each child could develop an independent relationship with his or her own statue as they worked with the clay and frame. Most worked independently but some needed help. A was so absorbed in her work that she made finer aspects of the statue like detailing of fingers on her own independently. Some children were simply playing with the clay, making balls, and the Diya had to coax them to move on to the work of finishing the statue.



## **Activity 6** Making the statue's head, hands, legs

**Objective:** To finetune concentration and motor skills

The Diya showed the children how to shape the statue's head, legs and hands. The children followed suit, and then left their statues to dry for a day.

**Resources:** Wet soil, newspaper, water, model of statue

**Evaluation:** All the children made the heads of the statues at the very end. They needed Didi's help to shape the heads and add finer details and features on the faces, fingers and feet.

## **Activity 7** Painting the statue

**Objective:** To develop concentration and painting skills.

The Diya asked the children to think and plan the colours they would like to use. Children chose colours relevant to their statues, such as blue for Krishna and Shiv, and black and red for Kali.

They began by painting the statues with a white base colour so that the final colour would appear brighter. When painting the heads, the children were asked to be careful so that the black of the hair did not get smudged on to the face or body. When painting finer details like eyes and lips, the children asked Didi for help.

**Resources:** Watercolour, brush, model of statue

**Expected Evaluation:**

- Holding of brush
- Painting skill

**Actual Evaluation:** All the children enjoyed painting the statue with colours. Some children who had control over the brush could colour beautifully while some needed practice. **P** painted with great awareness, and he was able to keep the paint from dripping. **A** sang as she painted; her joy was evident. **A** acted as if she was churning butter, even as she painted her Krishna statue!



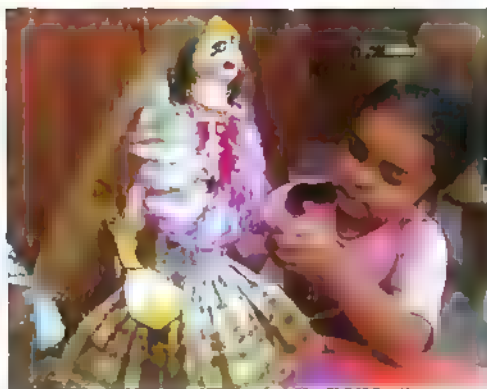


**Activity 8** Dressing up the statue  
Objective: To develop the aesthetic sense

The Diya displayed small costumes and the children chose costumes for their statues. They dressed their statues and added accessories. Some children also made new accessories as needed, such as swords, crowns, garlands and flute.

Resources: Cloth, glue (self-made)

Evaluation: All the children dressed up the statues with their favourite clothes. They also added on accessories such as crowns, bangles and glitter. The children even made accessories at home to ensure that their statues had everything that was needed. One child brought accessories for every hand of Kali.



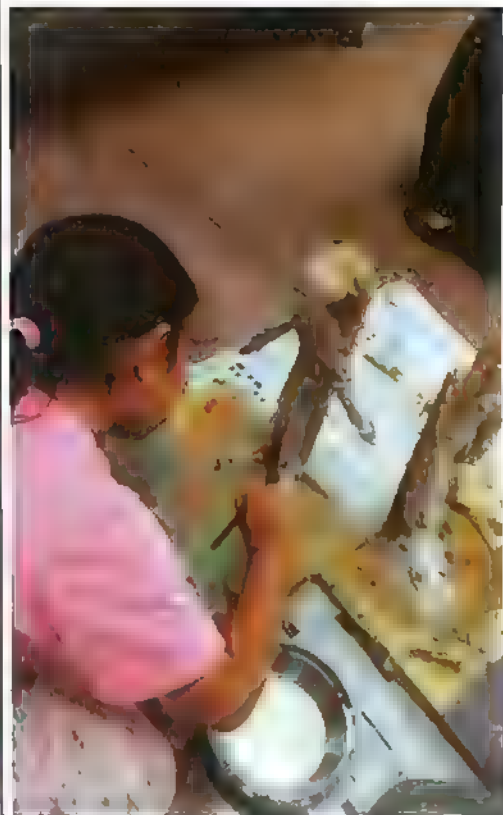
**Activity 9** Recognizing word pictures

Objective: To write the names of all objects used and to make sentences

Hindi worksheets were given to each child. The children had to write the names of all the materials they used from the picture given in the worksheet.

Resources: Self-made worksheet, pencil, paper

Evaluation: Children wrote the names of all the materials and things required for making statues, such as hammer, anchor, clay, paint and costumes. They wrote the names of the body parts they had made for the statues in hindi.



**Activity 11 Reflections (what do you want to learn from your statue)**

**Objective:** To develop thinking and feeling abilities

The Diya asked the children what they would like to learn from their statues. The children were happy and eager to share their thoughts. Some of their expressions were as follows:

**Reflections by Children**

विष्णु जी

मैंने विष्णु जी की प्रतिमा शांति से बनाई है। मैं विष्णु जी

से अच्छे से पढ़ाई-लिखाई करना सीखूंगा। मैं उनसे ताकत लूँगा। मैं उनसे शांति लूँगा। मैं उनकी तरह म्यूजिक के समय पर ध्यान लगाकर बैठना सीखूंगा। -अ

हनुमान जी

मैंने हनुमान जी की प्रतिमा बनाई है। मैं हनुमान जी की तरह अच्छी बुद्धि चाहता हूँ। हनुमान जी की तरह शक्ति लाना चाहता हूँ। वे सबकी रक्षा करते हैं, मैं उनकी तरह सबकी रक्षा करना चाहता हूँ। मैं मंदिर में उन पर फूल चढ़ाता हूँ। मैं उनकी तरह राम भक्त बनना चाहता हूँ।

-प

**Activity 12 Dance practice for Durga Puja Celebration**

**Objective:** To develop coordination among partners, to make gestures relating to the words.

One child asked, "Can we become like our statues and dance?" This made the Diya think and consult a senior Diya.

They decided that children from the yellow group would sing a song while children from the green group would dance. Thus, Om Namoh Maheshwari was sung and danced to. The children danced enthusiastically, and tried to coordinate their movements, with the song and with one another.





Resources: Yellow group children, sound system

### **Evaluation of the project**

All the children worked on statue making with dedication and carved out artistic, beautiful idols. The children went through the step by step process of idol making. In the beginning, they listened to stories about making idols with different materials. Then they participated in discussions about making different idols and decided which statue they would make. In this process, they expressed their thoughts at first by drawing pictures of their statues. Then they gave shape to their imagination by tying the frame of their statues to the anchors with the help of ropes. They pounded dry soil into a fine powder, sieved it, soaked it in water for a day and kneaded it the next day.

This process developed their senses of smell and touch. The wet soil was then put on the frame to create body parts of the idols and then small pieces of wet cloth were stuck on. These were then left to dry. Next, the children worked on fine details of the statues, such as hands, feet, toes, fingers, ears, noses and lips. They painted their statues in different colours. The children did all the work with great skill and concentration. Finally, they decorated their idols with colourful apparel and accessories.

Once their statues were completed, the children looked at them and shared what they wanted to learn from their pratima. They did language work too, such as reading all the words related to the topic by looking at the objects exhibited. They also drew pictures of these objects and wrote their names on paper. They read topic-related sentences. They even completed incomplete sentences by sensing the meaning intuitively.

Over the course of this project, they learnt about the human body parts through drawings. They labelled the parts on their drawing after reading off the board. They sang songs based on their topic and chanted Durga Maa's mantra everyday. They sang and learnt how to dance to the song titled Om Namoh Maheshwari. On the final day of the project, the yellow group children sang and the beautifully dressed green group children danced with joy.

**Conclusion:** The statue making process brought a feeling of deep joy and involvement in the group. The children developed a bonding with each other and they worked together as a group to prepare their statues. The children flowed into the statues they were making and gave them beautiful life. They communed with the living statues in their own unique ways.

### *Reflections by the Diya*

To execute such an activity, a team of people is needed to help the children. It would have been better if there was more coordinated help during this project.

However, the children cooperated and worked with me to complete the

project. I feel good that the project went off well and the children liked what they did and learned so much.

I felt very happy as the children were able to work together with harmony and enthusiasm, helping each other and moving ahead individually and as a group.

The first principle of true teaching is that nothing can be taught. The teacher is not an instructor or taskmaster, he is a helper and guide. His business is to suggest and not to impose. He does not actually train the pupil's mind, he only shows him how to perfect his instruments of knowledge and helps and encourages him in the process. He does not impart knowledge to him, he shows him how to acquire knowledge for himself. He does not call forth the knowledge that is within; he only shows him where it lies and how it can be habituated to rise to the surface. The distinction that reserves this principle for the teaching of adolescent and adult minds and denies its application to the child, is a conservative and unintelligent doctrine. Child or man, boy or girl, there is only one sound principle of good teaching. Difference of age only serves to diminish or increase the amount of help and guidance necessary; it does not change its nature.

Sri Aurobindo, CWSA, Vol. 1, p. 384

# My beautiful city: Delhi

## Introduction

*A humble attempt has been made by the Class 1 teachers of The Mother's International School to share a few delightful experiences and anecdotes from a thematic project approach of learning. In this project approach, the children and teachers are involved and work within a flexible schedule and curriculum, making it more effective and related to everyday life and the environment and making it a lasting experience for the children.*

*Keeping in mind the basic principles of child development and the school's philosophy, we plan our curriculum which is theme related and further subdivided into goals and related activities to facilitate the achievement of "all round development of a child". In Class 1, we follow Sri Aurobindo's philosophy of Integral Education which explores and seeks to educate the physical, mental, vital and psychic domain of each child.*

*Therefore, we try to achieve the various goals of our curriculum through integrated learning, through a combination of the Thematic Project approach and Circle time. Our main aim is to motivate the child to become confident, observant and cognitively developed. A lot of activities are introduced to enhance their gross and fine motor skills. The children are made well aware of their culture by celebrating and discussing festivals and doing related art and craft activities to reinforce the same. Discussions, storytelling and circle time are periodically done in the class to inculcate social values in the children which make their personality blossom.*

### **Thematic Project Approach**

This is a way of teaching and learning whereby many areas of the curriculum are connected together and integrated within a theme. We believe that each child is special and unique in his/her own way and that learning is most effective when children are actively involved and engaged in carrying out tasks that are meaningful to them. Young children learn from everything that happens to them and do not separate their learning into subjects. We follow the 'near to far' approach.

We began the session with a project on 'Myself', which was followed by 'Around Me' wherein the children familiarized themselves with their neighbourhood. Then we stepped out and discovered 'Our Beautiful City, Delhi'; followed by exploring our vast 'Animal Kingdom'.

The thematic approach helped the children internalize the concepts. They could be easily motivated and actively involved. They developed learning skills more quickly as each one was connected to and reinforced by the others.

Setting up circle time is the start of a process of involving children in the classroom. It helps to create an environment conducive to real consultation, shared responsibility and decision making. Circle time helps to nurture the emotional health of the children. It offers them a place to develop social and emotional skills, learning to provide supportive listening and acquire a language for sharing feelings and ideas.

Hence our focus is on facilitating complete personality development through the child's abilities and interest.

### **Project: 'My Beautiful City-Delhi'**

After exploring 'Myself' and 'My Neighbourhood', we proceeded towards exploring our city 'Delhi'. We had a discussion on what the children knew about Delhi. They were asked to name the places they had visited in Delhi. The majority of the class could only name Malls and Restaurants. They were told that Delhi is much more than just Malls and eat outs. The children were then showed pictures of a few more monuments and places in Delhi. On seeing these, a few more could recall that they had visited or heard names of some of these like India Gate, Zoo and Qutub Minar. This was just an introduction to my beautiful city – Delhi. We explored it in detail over the next few months. Under this Project, we covered Delhi transport, major landmarks of Delhi, monuments in Delhi and famous foods of Delhi!

#### **Integrating a Montessori Session with the Project Methodology:**

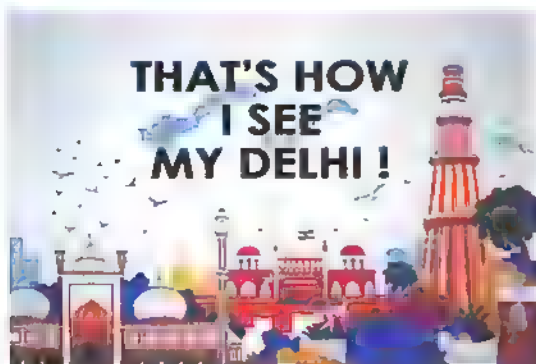
An English language session was integrated with the ongoing project on 'DELHI'. A PowerPoint on Delhi was shown to the children. 'Opposites' as a language concept was taken up.

Through the class location display board, the concept of the amazing 4 Cs was revisited.

1. Colony - where their school, homes and favourite markets were located
2. City - in their case, the capital of India
3. Country - India
4. Continent - Asia

The importance of a capital was explained. What makes a capital different from any other city was discussed.



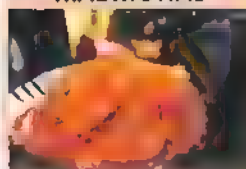


The City of Delhi was introduced as a city of opposites and contrasts. Opposites included: Old – New, Day – Night, Then – Now, Fast – Slow, Noisy – Quiet, Big – Small, High – Low, Traditional – Modern, Wide – Narrow, Huge – Tiny, Easy – Difficult, Front – Back, Clean – Dirty, Front – Back, Ugly – Beautiful, Open – Close, Far – Near...

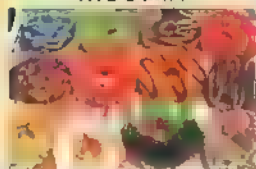
In an interactive session in the Montessori class, the children were encouraged to speak, share their experiences, and state their associations with the city.

Different aspects of the city were highlighted using the above mentioned opposites. In most sections the history of the building and rebuilding of Delhi as a capital nine times, the history of the walled city, the debate on how to feed birds and where to feed them, the dead Yamuna river and the change in its course, the loss of many lakes, ponds and natural water bodies in the area, step wells and the falling water table became the major subtopics that interested and fascinated the children.

TRADITIONAL



MODERN



**Activity: Knowing my neighbourhood in Delhi:** Children were grouped on the basis of the areas they stayed in. We had children staying in CR Park, Alaknanda together in one group; those staying in Green Park, Hauz Khas area were in another group. One group was for JNU & Vasant Kunj residents; another for Begumpur area and Sarvodaya; yet another for Malviya Nagar, Saket and last group was for IIT campus, Sarvapriya Vihar and Panchsheel. Each group was given art sheets, scissors, glue sticks, origami sheets and land transport pictures. Each group was asked to discuss landmarks, malls, hospitals, schools and children parks in their area. They were asked to recall, discuss where they went to play in the evenings or for shopping with their parents or what they see daily on their way to school. They had to draw these landmarks, getting there, flyovers, petrol pumps, food joints and public transport which can be used. The idea was that they had to introduce their area to the rest of us who wanted to visit but knew nothing about it. It was a pleasure to see them discussing, planning and working together. All the collages were amazing and reflected each child's idea and creativity. Each child felt valued that they have the ability to contribute in making something beautiful. We had a class presentation in the end.



## Delhi Tour

To explore our beautiful city, Delhi, children were given 'Delhi Tour' as a home assignment. They were asked to visit at least 3 places with their parents, click pictures and do 'Show & tell' presentation in the class. In class too, major landmarks (Dilli Haat, Rashtrapati Bhawan, Teen Murti Bhawan, Metro Station, Malls, Parks), and Monuments (Red Fort, Qutub Minar, India Gate, Lotus Temple) were discussed in detail through picture cards, images and Power point presentations. Children were also shown samples of the rocks and stones from which Lotus Temple (White Marble), Red Fort (Red Sandstone) and India Gate (Bharatpur Stone) are made of. They were fascinated and excited about exploring their city, Delhi.

## My Favourite Place In Delhi

Few sharings:

- The place I like is the Rail Museum because it has different models of trains. There is also a toy train on which I like to sit.
- The place I like is Qutub Minar

because it has lots of places to play in. The Qutub Minar was built by Qutab ud Aibak.

- The place I like is Dilli Haat because I like going up the stairs and come down the ramp.
- The place I like is Jama Masjid because it is big. I also like Bangla Sahib because I get burfi on Diwali.
- The place I like is The Garden of Five Senses because it has pretty trees and lots and lots of stones. It is one place which does not have garbage.
- The place I like is India Gate because I like Amar Jawan Jyoti. India Gate was made by Sir Lutyens.
- The place I like is the Delhi Zoo. I like to see tigers and monkeys there.

We made a booklet titled, 'Joy ride in Delhi!' For the cover page, the children made a car of which obviously they were the drivers. They chose their co-passengers and drew them too. We discussed that this booklet will be like their journal and they could write / draw their memoirs of Delhi experiences and learning. Children drew their experiences



while coming to school and the landmarks they see in the journal. They drew their favourite food joints, and markets they visit with their parents. The day we discussed India Gate, children were told about 'Amar Jawan Jyoti' and the 3 flags of the 3 defense services hoisted there. As a follow up, children drew these in their booklet. Similarly, when we were discussing Lotus Temple, they were also shown an aerial view of the Lotus temple to see clearly the design of the Lotus temple with 3 layers of 9 petals each and the 9 ponds surrounding the lotus. On seeing the aerial view of the ponds and the Lotus Temple, one child commented that it looks like a beautiful Lotus flower floating in the pond!!! Children then drew this aerial view too in their booklet.



मैं अपनी मोटर गाड़ी में जामा मस्जिद और रेल म्यूजियम गई।

मैं मम्मी के साथ गई। मैंने वहाँ कुल्फी खाई।

मैंने लाल किला भी देखा। मैंने लाल किला में रामलीला देखी।



### Educational Trips

Children were taken for an educational trip to 'Lodhi Garden'. They were briefly explained the architectural details of the Tomb and they we did a quick round. They had taken their Sketch books too. After their tour and food, children sat on the mats and drew in their booklets the Tomb and trees that they could see from where they were sitting. They drew detailed and beautiful sketches of the Lodhi Tomb and landscapes they saw there.



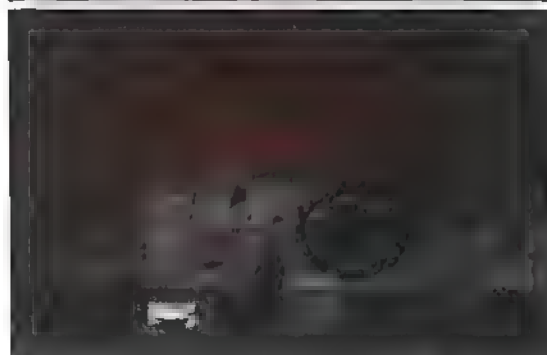
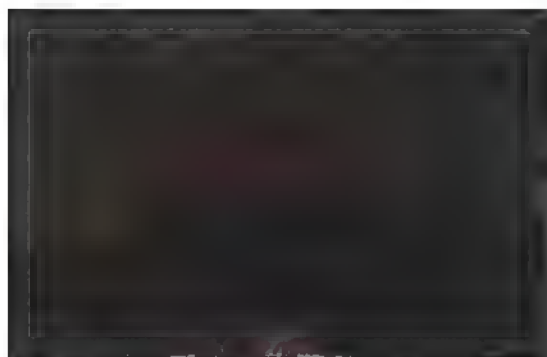
The children were also taken for Itihaas Heritage Walk – 'City of Circles'. They drew their experience in the booklet – the roundabouts, India Gate, 3 flags of our defence services, Amar Jawaan Jyoti and Teen Murti Bhawan.





### **Sound and Light Show – Purana**

**Qila:** We watched the mesmerizing 'Sound & Light show' at the Purana Qila. The children watched the show with such fascination. Many parents came up to say that they had also not seen such a beautifully portrayed show and also that there were so many facts about Delhi that they didn't know about. This activity also ended up being family bonding and outing time. It was good to see not only the parents but also the grandparents and cousins came along with the children for the show.



We visited the Rail Museum. Children enjoyed the toy train ride, especially going through the tunnel. They were reading the names with great interest during the journey. They also took a round of the mini models displayed and we shared inputs and observations. Monorail caught everyone's attention and became the topic of discussion for a long time since the single track fascinated them. After

their tour, children sat on the mats and drew in their booklets the engines on exhibit that they could see from where they were sitting.



### **Transport**

We started with talking about the transport they used for travelling from one place to another and understanding the importance of transport and how the invention of the wheel changed people's lives. We rolled cutouts of different 2D shapes to check and understand why wheels are always circular and not of any other shape. We had a discussion on different road signs, traffic rules and their importance.

Children were also asked to bring two pictures each of land/air/water transports from home. They made a collage representation of a landscape in groups. This also helped them understand teamwork – one child was drawing, the other was giving suggestions and also cutting the picture outlines; meanwhile another child was planning where the picture cutout was to be pasted, and the fourth child was applying glue or helping in colouring.





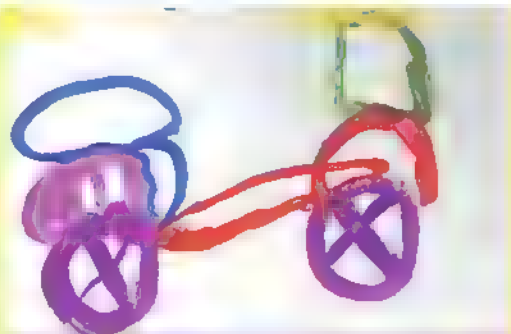


A lot of creative writing (Transport related) was done: "zip zap zoom...", "If I was a vehicle, I would want to be...". They had to choose their favourite mode of transport, write 4-5 lines from experience or imagination and draw the same favourite mode of transport about which they had written - by just drawing the outline using the paintbrush. We had a beautiful session of sharing. Since it could be from imagination too, children even chose the jet fighter plane, submarine, hot air balloon, rocket and the racing car! Children enjoyed this activity. Their artwork came out very nice and bright!

'It was on last December for my train ride with my family. Then it starts rain. I watched



It was on last December for my train ride with my family. Then it starts rain. I watched outside from the window. Then we stopp'd at the station then. We gett'd



On day I went to my nani's place. Nana took me and my sister to a vegetable shop on a scooter. I sat on front seat of the scooter. Nana was riding but I felt as if I am riding the scooter. It my joy riding.

outside. From the window. Then we stopp'd at the station then. We get off.'

One day I went to my nani's place. Nana took me and my sister to a vegetable shop on a scooter. I sat on front seat of the scooter.

Nana was riding but I felt as if I am riding the scooter. It my joy riding.'

'If I was a vehicle, I would want to be a bus. Then I will take the children to the school. And the children had a nice time.'

'If I was a vehicle, I would want to be a bus and the children play with me. I take them to school. One day the driver start playing with me. We play Ludo and Snakes and Ladders.'





**‘Number plate’ activity:** The children were taken to the parking area. There they observed the number plates of the cars and noted down the vehicle numbers in their booklets. They had been told about the number plates, especially the first two letters indicating the state in which the vehicle was registered. In the parking lot, they found DL, HR, RJ, AP, UP vehicles. Many could themselves figure out DL and HR. Also, some children already knew the difference between the white and the yellow background of the number plates and also the new ‘IND’ monogram. Children were really excited and enjoyed the activity a lot. In the class,

as a follow up, children made their own number plates – DL (for Delhi) 1A (class name) and their date and month of birth as the last 4 digits, for example, DL 1A 1204.

**Handling Data:** The children were explained the concept as well as the need of handling data. They enjoyed grouping the data using tally marks. Children were taught how to make tally marks (grouping of 5 lines to make a box) and skip counting of 5. Tally marks was also linked to our Project ‘Delhi’. Children were taken outside the school. They sat on the pavement and observed the different vehicles (cycle, auto rickshaw, car, bus) that passed in front of them. They were counting how many of each kind passed them by, making tally marks on the note books. Later, when they came back to the class, they added them up using skip counting of 5 and compared their data. They loved this activity. In fact, many were reluctant to even come back to the class.



## Road Signs

To introduce road signs, children were first asked to draw their experiences while coming to school and the landmarks they saw. They were asked to draw a road map, the vehicle they were in, draw where they were going, and then draw the road signs they saw along the way. Children drew, 'School Ahead' sign before the school building speed breaker, a roundabout with its sign 'one way' sign, cross-roads with traffic signal, traffic policeman, zebra crossing and its signboard, parking lot with the sign to guide, 'stop' sign-board, petrol pump sign and the petrol pump, and even the speed limit sign. Next, they were shown pictures of different road signs they see on Delhi roads and their significance. They were explained how some of these are mandatory, few cautionary and others informative. They were shown examples of all the 3 categories. Children were also shown a PPT in the AV room on the same. We had discussed each one of them. We had many discussions about

the importance of having rules on the road and following them.

They were then given a Home Assignment to find out about any four road signs, and do a 'Show & Tell' presentation in the class.



## Mapping

On a bright wintery morning we took our class out to observe the sun. The children felt nice and warm. They started playing with their shadows. They were asked to note the direction of the sun. This was followed by a detailed talk on all the directions and how in the earlier days people travelled following the stars and the sun, when they didn't have compasses

or maps. We played an interesting game - Simon says 'run to north', 'wave to east' and so on.

We went around the school noting the direction of each building, the playground and the canteen. Children then sat down with their scrapbooks and tried mapping their school keeping in mind the directions.



### Map of Delhi

The map of Delhi was shown to the children and a few questions were asked. Here are some interesting replies: "This looks like the lion's face", "My mom makes roti like this", "It looks like a toy gun"!

We marked our school on the map and children spontaneously started locating their homes from school.

We played the game 'I spy' and tried to locate some prominent places like the Red Fort, India Gate, Rashtrapati Bhavan, Qutub Minar, Jantar Mantar, Akshardham Temple, Jama Masjid, Yamuna river and some more. Children took a keen interest in the game. It gave them an insight on the location of these landmarks and a clear understanding of directions.



There was a follow up cut and paste activity on mapping which focused on reinforcement and fine motor training. The children were given a reference map in which only the names of the monuments & major landmarks were

written and marked. Using this reference map, on another given map of Delhi, children had to cut and paste pictures of those monuments and major landmarks of Delhi. Children could do this activity independently. To enhance logical thinking, the children were also given a maze puzzle to solve. Many were able to find their way from the start point (school) to the end point (Red Fort) in the first attempt. Some children first tried tracing the route with their finger and when they found the correct way, they used the pencil. They thoroughly enjoyed this activity.

### Post Office Visit

At the beginning of this activity, we asked the children:

We all reside in Delhi with our families.

But, do we have all our relatives living with us or in the same city?

The answer was a loud 'NO'.

We further asked:

Do we need to keep in touch with them?

If yes, then how?

The responses were:

"Hum phone pe baat karte hain"

"Mummy wats app karte hai"

It was observed that in today's scenario, for children, telecommunication is the only way of communication. So, they were showed an audio-visual on how a child communicates with his grandparents through letters. Later, children were asked to think and answer a few questions like:

What was so special about writing letters?

Why did the child always write letters

even when he had a phone at home? How

did the grandparents feel? How did the

boy feel?

The children got inspired to write a letter

too. So, we decided to write a letter to our

parents. The children were taken to a

nearby post office. For most of them, it

was their first post office visit. The post



master briefed them about the journey of the letter. He showed them different stamps, the letter box where children had to put the letter, the postman who will bring the letter to each one's home and the number of days it takes.

Children took note of the sign of the post office and some even drew it in the scrapbook.

They were all very excited and asked each day, "Ma'am when will mumma papa get the letter". They all shared their experiences as their parents received the letter. Some even met the postman and asked his name. It was a feeling of accomplishment and empowerment for the little ones.



### Phoolwalon ki sair

Children were told about the festival that is Delhi's unique festival. The Festival is being celebrated since Delhi had Mughal kings. It is a week-long festival when Hindus and Muslims together offer the floral chaadar and pankha at the Dargah in Mehrauli and floral pankha and chhatra (canopy) at the ancient temple of Devi Yogmaya, also in Mehrauli.

Children were also shown a video on the same in the AV room. The pankha (made of flowers) has become a symbol of harmony and national integration and so each child made one 'pankha' in class. Children did block printing of floral de-

sign on the cutout of a pankha. Some even made one big 'pankha' in class. Children made colourful paper flowers (using fan folding technique) and these were pasted on the 'pankha'!



### Delhi Winters

As we discussed all seasons of Delhi, we had a detailed discussion about Delhi's most famous season, i.e. the winter season. While discussing about it, we focused on providing new vocabulary to the children. Teachers had a conversation with them and we discussed that winter stays in our country for about three months. The whole atmosphere is cold in this season. Nights are long and days are short. A cold winds blow all the time. The sky often remains clear. Sometimes it rains during this season. Dew drops are seen in the early mornings. We took children out for a nature walk where they could see dew drops on a few leaves and also feel the cool winds. Besides, dew drops on the grass look like pearls. During foggy days, children would get excited coming to school. They were also explained how they could protect themselves in cold winters. We discussed different clothing we wear during the cold season. Children discussed their favourite clothing like – Gloves, fancy socks, jackets and caps.

A lot of winter related creative writing and craft activities were attempted. Children wrote about what they liked to do in winters.



*Winter is a cold season. We wear woolen clothes in winters. We eat and drink hot things like tea, milk. The days are short and nights are long.*

*In winters I love to eat oranges. From November we wear winter uniform. In January I celebrate my birthday and have lots of fun.*

*Winters is fun. In winters I eat sweet potatoes in winters. I play snoy fight. In winters I make things like snoy man snow castle.*

*If I were a Snowman...*

*I am a snoman. Man make me and play with me. I am live in nothpole. Children play with me. I play with children.*

*If I were a snowman...I would wake up in the morning. When I would see that I am a snow man I would take my dolls and play with them. I would make them feel the snow on my body and make them sit on my body. I will make children happy when they will see me. I would feel happy because they like me a lot. I will be very happy.*

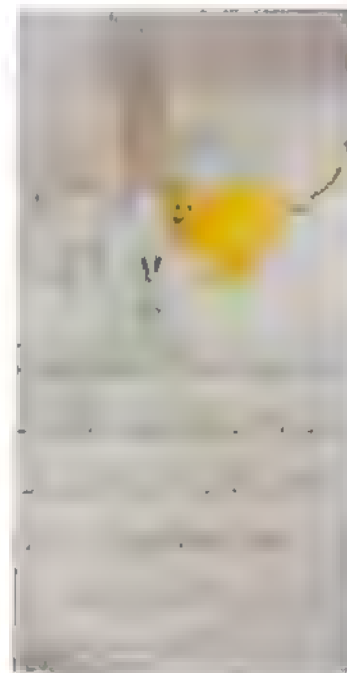
*If I were a snowman...I eat ice cream in water and feel cold. But I have no cough. And people make me during christms. And I live in North pole. People say hi snowman and people say please play with my children.*

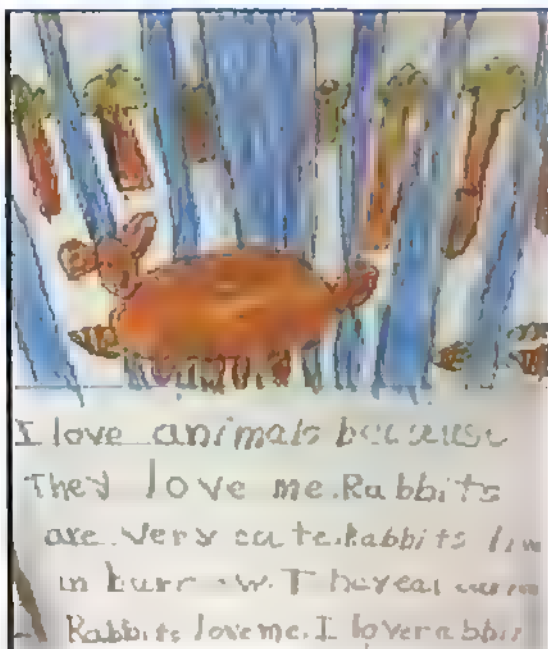
## Animals

As part of the Delhi project, we wanted to cover Delhi zoo. It's always a hit activity with the children at this age. It also was a link to the next Project – Animal Planet.

During the mapping activity, children found out the location of their city's National Zoological Park. As most of them had visited the Zoo, they were asked how they went there. Some went by cars, others by autos and metros. They tried to recall names of areas, roads, or stations that they crossed on the way. The children shared their experiences through words and illustrations.

We spoke about the animals living in the Zoo. We talked about their lives, their habitats, their food and family. This led us to a comparison





between animals in the Zoo (caged) and animals in the jungle (not caged). Children were asked to close their eyes and think of a life wherein they are not free to do what they want to do, they cannot eat food of their choice, cannot meet others... A change of expressions was noted on their faces. As they were sensitized towards the situation of the caged animals they felt extremely compassionate towards them. We discussed ways in which we can save animals and give them a happier life. We did a creative writing on 'We love animals'.

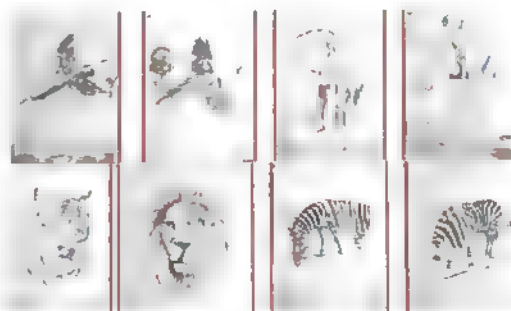
*'I love animals because they love me.  
Rabbits are very cute. Rabbits live in  
Burrow. They eat worms. Rabbits love  
me.  
I love rabbit.'*

A 'show and tell' was planned. Children had to make a mask (best out of waste) of their favourite animal and speak about or enact the same. One of them became a horse and very effectively showed how helpful it has been to mankind since gen-



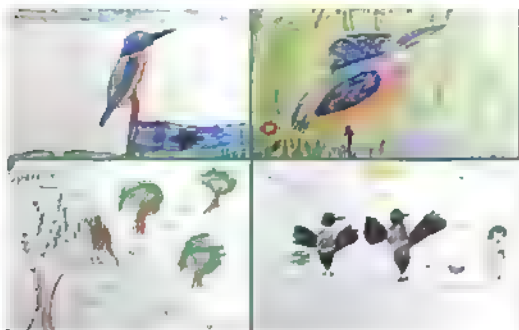
erations. One was a tiger and he enacted a scene conveying the message of saving tigers for environmental balance. Children were encouraged to read newspapers and look for news on animals. They were asked to get a cut out of the same for sharing and other group activities.

We did a 'Complete me' activity, wherein a shaded cut-out of an animal was pasted on an A4 sheet and the other half was pasted on another sheet. Children sat in pairs and the sheets were distributed in a way that one child got the front half and





the partner got the other half. They had to look at the other half and complete the animal. This activity had outstanding results. Children got an idea about proportion and direction of shading. This was a different and challenging activity but the children carried it out beautifully.



### State bird of Delhi – Sparrow

We discussed on how our state bird is leaving Delhi and the reasons behind it. We discussed the topic: 'Welcome back sparrow' and what we can do about the issue. Each child made his/her own little sparrow with clay, named it and had a conversation with it. They introduced themselves, asked the bird its name and invited the bird to their house telling it that it could make its nest in their house, that they would feed it, take care of it, to become their friend and play with them. Some even told the little bird about their family members.

### Chirpy Birds of Delhi

Pictures of birds commonly found in our school, Ashram, India Gate gardens, Lodhi Garden and Bird Sanctuaries were shown.

### Together we can...

Due to the choking Delhi smog, many children came to school wearing masks. We first discussed 'air pollution' and 'air' in detail. How air helps us? We named a few things that move with the help of air. (E.g., windmill, helicopter, hot air

balloons and kites), named musical instruments which use air to make music (E.g., flute, trumpet), named things in which we fill air (tyre, ball, balloon) and tried whistling for fun! We did 'Air Hunt'! Can you see air? Can you feel air? Can you touch air? Where is air? What is moving air called? What are the uses of air? Even a fire needs air to burn! We also did a few breathing exercises.

For a few days, we also made a weather update calendar for the month of November. Every day, we started checking the temperature and the air condition and wrote it on the calendar. We checked the progress. For a few days, it said 'smoke' and the day it said 'fog' we cheered and clapped and gave that day a smiley on the calendar!

We also discussed with the children, "How can we help to keep our air fresh and clean?"

Here are some responses:

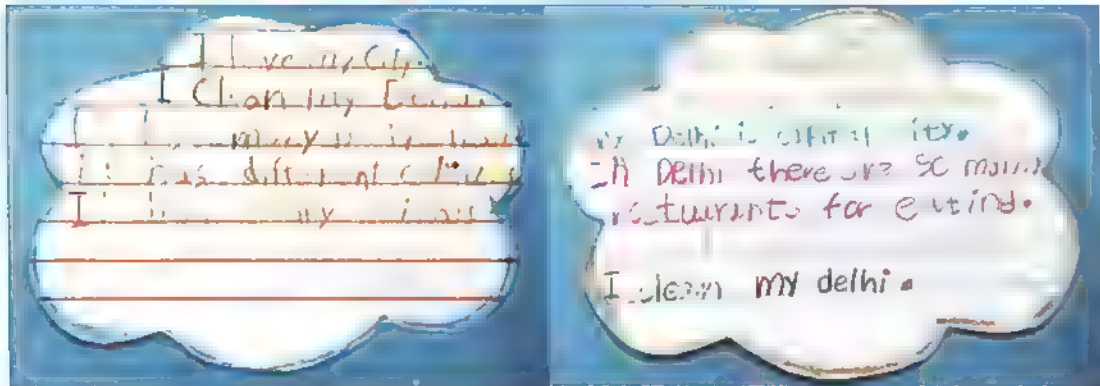
- Use car pool or walk.
- Use school bus.
- Do not burn crackers, dry leaves.
- Grow more plants and trees.
- Get car pollution check.
- Use CNG car.
- Factories should be made far away.
- Spray water outside house to settle dust.

We also did the 'News reporter' activity. Children had to find out and share interesting news about Delhi. Children shared the news enthusiastically. Parents also took interest and put in effort to prepare the children. A few of them even named their News channel 'Great Delhi News', 'Delhi Kal tak', MIS TV"!

### I love Delhi

- ...because it is green and the zoo is fun.
- ...because Delhi is our home. It is beautiful. Delhi is the Capital of India. I am proud of my Delhi.





- ...because Delhi has so many festivals. It has so many forts. It is our home. Delhi has zoo
- ...because we have good food. In Delhi we have good people. Delhi is colourful.
- ...because I live in Delhi. Delhi is colourful and it has a lot of birds in it. It has Rail museum. It has a lot of trees.
- ...because Delhi is our home. Delhi is beautiful. Delhi has metro. I enjoy seasons.
- ...because Dilli is so colourful. Dilli has so many festivals. Delhi has so many temples.

'I love my city.  
I clean my Delhi.  
It has many metro train.  
It has different colours.  
It has many minars.'

'My city is elan and beautiful.  
My Delhi is capital city.  
In Delhi there are so many  
restuarants for eating.  
Delhi has so many metro trains.  
I clean my delhi.'

### Beautiful Delhi

Children had been exploring Delhi by visiting different places as a part of the Delhi Project. They depicted the same on paper through an activity where they cut



pieces of coloured paper into different shapes and pasted them on another sheet to make their favourite place out of all the different monuments/places they had visited. They completed the rest of the scene by free hand drawing.

### Clean Delhi Green Delhi

Our children are gradually being sensitized towards the importance of clean surroundings, proper waste segregation/ disposal, use of aluminum foil, through the viewing of videos, reading out articles and discussions. Taking the near to far experiential approach in the learning process, the children have been introduced to the two dustbins in the classroom, the school campus and on the roads of Delhi. They are now well aware that the Green dustbin is for wet waste like fruit peels and the other one is for other types of garbage. The children are now discouraging their parents and family members for using foil as it is harmful for the environment.

We are constantly talking about reduce, reuse and recycle. We are not only talking but also following the rule.

We had discussions on: 'Things which will help to keep the streets of our city clean'; 'How will you save water?' and NCR - our neighbours: Gurgaon, Faridabad, Noida... These were good interactive sessions. Children had a lot to share about these topics.

### **We are responsible - Children's pledge**

- To keep our air fresh and clean, I will keep my air fresh and I grow plants and trees and I say people to not smoke.
- To keep our air fresh and clean, I will not burn crackers. I will tell to my father please put our car CNG. I will grow plants.
- To keep our air fresh and clean, I will grow plants. When I see the smoke I go to my home I take my water spray and then I spray it. And I use only CNG car.
- To keep our air fresh and clean, I will grow plants and water also, not burn leaf and also not burn crackers.
- To keep our air fresh and clean, I will grow plants and trees. I will give my friends seeds on my birthday.
- To keep our air fresh and clean, I will grow more plants. I will spray water. I will do car pooling.
- I promise to keep my city clean, we can make a board and we can write no dirty thing to throw
- I promise to keep my city clean by myself if somebody throws garbage on the road I will say please take your garbage and throw in the dustbin.
- I promise to keep my city clean by keeping dustbin and air purifier and air perfume.
- I promise to keep my city clean by do not spit on the road. Do not cut trees.
- As a responsible Indian I will not

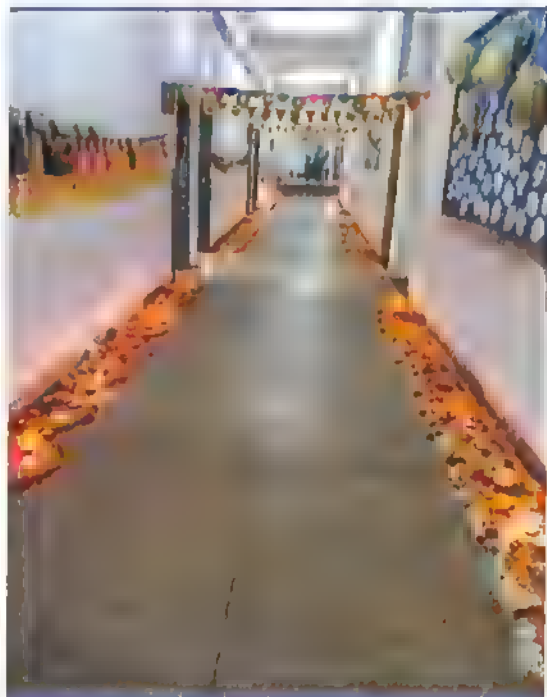
throw pencils and erasers. I will not throw garbage on the road. Jai Hind.

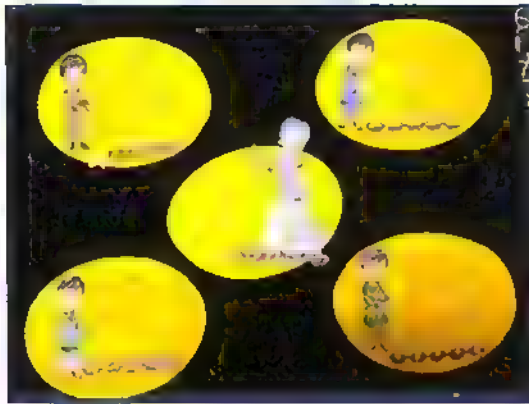
- As a responsible Indian I will not cut trees. I will give food to poor people.
- As a responsible Indian I will save paper. I will not throw pencils. Jai Hind.
- As a responsible Indian I will not throw food in dustbin. I will clean my room and class.
- As a responsible Indian I will not waste water. I will help people to cross the road.



### **Diwali**

Children spread the message of Green Diwali.....pollution free Diwali in various ways. They decorated the school by light-





ing diyas and making Toran and Floral Rangoli. They also made designs for Rangoli by folding the paper a couple of times and cutting its edges into different shapes. On opening the folded paper after cutting, a beautiful pattern came up. This was then pasted on a coloured sheet and used along with flowers to make the Rangoli.

They also wrote on cutouts of sheets - how they will make this Diwali special.

This Diwali I Willl...

'I will not burn crackers. I will pray to God every Diwali. I will help poor people.' 'I will give old man food to eat. I will give money to them.'

'I will not burst crackers, my sister gets scared, my grandfather gets sick, he coughs and catches cold.'

'I give sweets to everyone. I decorate my house. I will make a cake for poor children. I will not burst the crackers.'

'I will help poor children. I will not burn crackers. And I will give poor children a gift. And I will give them a home.'



Children were shown videos in the AV room. These videos were based on the story behind Diwali and encouraged them not to burn crackers. As a part of the 'Cracker free Diwali Campaign' children took on a march shouting slogans against bursting crackers.

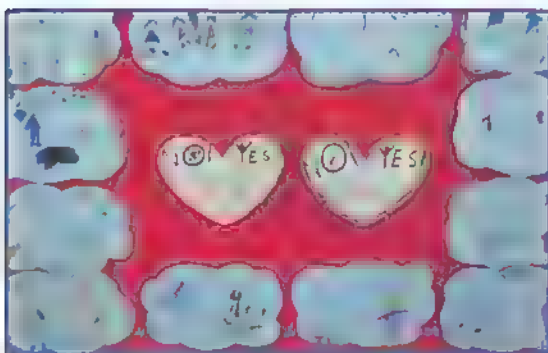
Each child of class 1 signed and took a pledge not to use crackers this and every Diwali. Almost 3 weeks before Diwali children made badges in class saying, "Papa don't buy crackers for me!" which children wore and went home.

They made posters and badges spreading the messages: 'Say No to Crackers', 'Keep the sky blue!', 'Let's celebrate Nature this Diwali!', 'Avoid crackers Avoid Noise!', 'Say No to Crackers and Yes to Diyas!' These posters were put up in different places in the school giving the message to celebrate a green Diwali.

Each child was given diya cutouts to







### Street foods of Delhi

Delhi is famous for its yummy 'Street food'. We did a drama activity. Children became food stall owners of their favourite food. They made food items with clay and put them on their stall to sell. They even designed their menu card. We had a food mela in the class. A noisy but fun activity!

### Snack Making

Each child was a chef. They all prepared a decorated biscuit snack. The ingredients required were Marie biscuits, jam sachet and a packet of gems. Each child brought

decorate and write on "What Diwali means to me?". Few responses: "I love to wear new clothes, I love gifts, I light lot of candles, I love lighting diyas, I like to do Lakshmi Puja with my family, I don't like loud noise of crackers and bombs..."

'Keep the sky blue. I do not want smoke.'

'I will not burst crackers.'

'This Diwali I say No to toxic smoke. I love gifts.'

'I do not like loud noise. I love to keep my city clean.'

'I will make rangolis'

'lets celebrate cracker free Diwali. I love to go for shopping and I love to make rangolis.'



the ingredients from home. They were asked to prepare the snack on their own using their own creativity. They were thrilled as they were making a snack themselves in their own way. They enjoyed working in the free space given. Most of them ate their decorated biscuits,



The excitement of having a party is not only to be seen but has to be felt in the children. This time the levels were higher as we were having 'Dilli Ki Mashoor' Chaat Papri party along with pakoras. The children were divided into groups to bring: Boiled potatoes, chanas, papri and mixed pakoras. The curd, the green chutney and imli ki chutney was brought by the teachers.

- ◆ Mujhe nahi pata tha ki yeh itna tasty hota hai.
- ◆ Mam kya aap meri mummy ko sikha dengi yeh banana.
- ◆ Main toh yeh everyday kha sakti hu
- ◆ Maam I like my papri chaat with lots of curd and chutney.
- ◆ Mam can I have more papri chaat.
- ◆ I want some extra papri only.

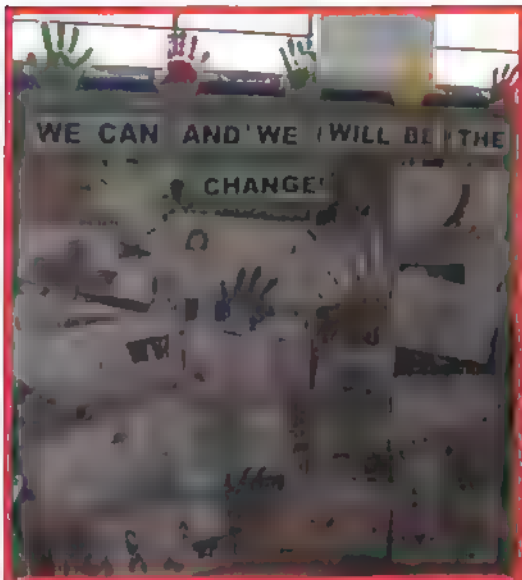
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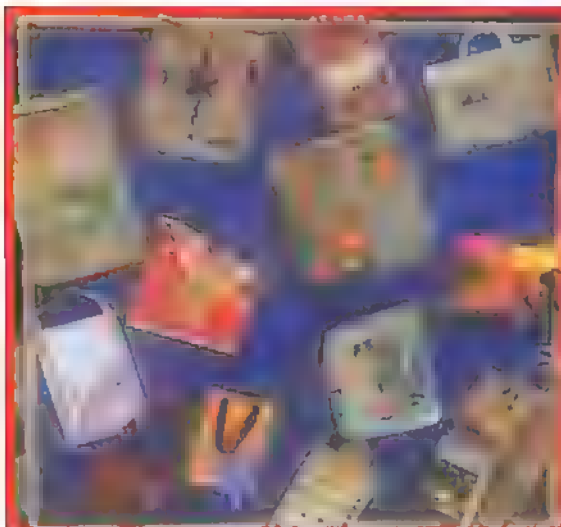


There were 5 stalls – Food, Music, News, Art and Theatre. We also had a dance performance and tattoo corner. The children participated in it with a lot of zeal. As we showcased the popular things about Delhi, we named it as 'MIS Dilli Haat !'

The Most exciting part of the event was the stamps which each stall had. And the visitors had to get their tickets stamped from each stall they visited.

We welcomed the parents with the 'Delhi' Song. Then, children performed 'Nukkad Natak' where they skillfully displayed how Delhi gets polluted and if we start taking responsibility; we can make our city a better and a clean place. Children wrote many interesting creative writings on how they can keep the city clean and green. Children's learning about the topic could be seen in their enactment.



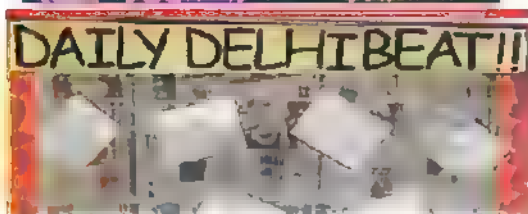


Children were prepared for this theme through some videos on how we can keep our immediate areas clean and through actual experience of segregating dry and wet waste by using different dustbins kept



in the classrooms. Parents admired their children's performance.

As we all know, our country and city appreciates talent; whether it's sports or dance. Hence, we also had a Rajasthani folk performance by the little girls and sports for a few children. Through these physical activities, children develop a greater range of movement whilst developing the ability to work within different spaces. They learn to interpret the effect their movement has on the world around them.







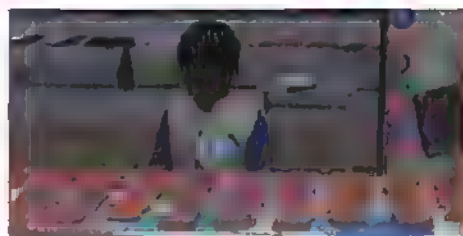
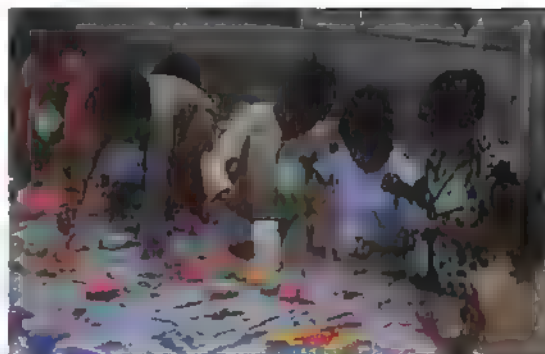
After performing the dance, our little girls took over the tattoo corner. They made cute and beautiful tattoos on parents' hands with different coloured glitter pens. The parents also were excited to get their hands tattooed by our little artists.

We all grew up listening to or reading the news from newspapers to keep updated on our general awareness. However, in today's time we have all the gadgets available to keep us busy with ourselves and we do not really get much information about the neighborhood. To inculcate the habit of reading the newspaper, children were told why we use the newspaper for learning. We also introduced our children to the newspaper through a class activity where children

prepared news and presented in the class as a News Reporter.

All of them were given enough time to prepare and present the recent news in Delhi. Children were excited and had very interesting opening and closing as a News Reporter.

Delhi being the capital city, it's very important to keep ourselves updated about the city we live in.





Children were encouraged to report about the recent activities they observed in MIS. Their work was displayed on the board under 'MIS Edition'.

Music has the power to awaken; it has a power to uplift. Even as adults, we stop wherever we hear music playing. It gives us joy and changes our mood as well. Our little musicians at the MIS Dilli haat performed beautifully. They love changes in variation and vocal tone. This keeps it exciting for them and helps them to learn about natural sounds. Children enjoyed playing different musical instruments, a few of which were made of recycled material. Although all children do not practice music on a regular basis, their excitement during preparatory sessions was evident.

There was a striking display of all musical instruments which were divided into three groups – String, percussion and wind musical instruments.

String musical instruments create sounds through vibrations, produced either through plucking or by an act of running a bow against the strings.

Percussion instruments create sound

through vibrations produced by striking an object with hands or some kind of a stick/beater.

Wind musical instruments create sound by air passing over/through a hole or the instrument itself, thus producing vibrations.

Parents were surprised to see such a creation and showed interest towards music by looking at those instruments. The parents went around each stall. Each stall was led by the children with the help of one teacher. The parents highly appreciated and encouraged our children.

One thing children love to do is art work. Lots of children were involved in art and craft activities. They were given exposure to the usage of colours and paints on different textures.

They were given experiential learning through related activities.

Stone painting was done using the poster colours.

Clay modeling: The children made lovely coasters through rolling a lace impression on it, which also helped them in developing the gross motor skills.

Beading was done using the thread and beads which again helped them in developing the fine motor skills.

Their creativity and aesthetic sense could be seen through the beautiful art work they showcased. Their work was displayed by decorating the place where the Open Day was held. They prepared the bunting using bright colours and patterns. Block printing was done on recycled sheets which was then displayed on the board. Their work made the place very colourful and bright.

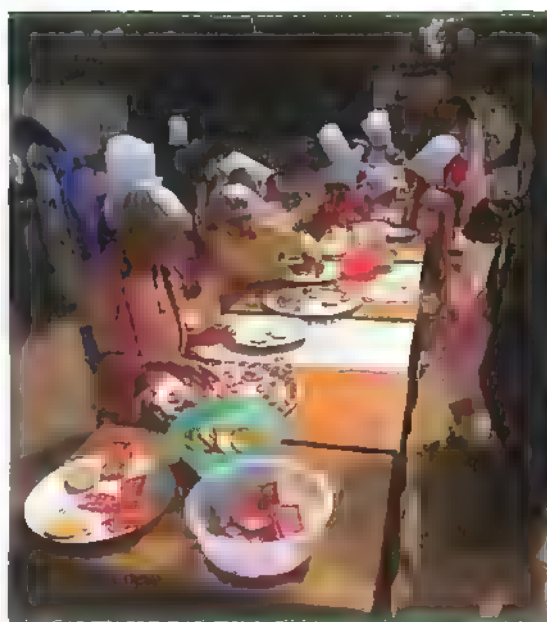
Through the year, we have been encouraging our children to read books. This was further emphasized through the





book mark making stall at the Open Day. The parents visited the stall and painted a bookmark for themselves with the children to take home.

On the Open Day, our little chefs were in action. They ran the stall of Bhelpuri and biscuit decorations with confidence and alertness. Our chefs were well aware of the hygiene points so they all covered their heads with plastic or paper caps and wore gloves too. It was a pleasure to see these children serve the guests with a smile and lots of love. While serving, they reminded the guests that there were dustbins placed behind them to throw the empty donas and to keep the area clean. They were thrilled with the large orders they received and the appreciation from all the guests who visited the food stall.



*In the Yellow Group, children step into their seventh year of learning in mirambika. During this time, their mind starts to take shape by developing its faculties. Their senses, from being inward looking, slowly become aware of the outer world. The fantasy world within, which had till then excited their wonder, slowly begins to change. The so-called 'real' world begins to invade their thoughts, and they start applying their practical knowledge in their behaviour, work and interactions. They begin to deal with situations that arise in their day-to-day life. Their expressions become more articulate and they can see the cause and effect of things and actions. They become aware of their own strengths and weaknesses. Friends and team spirit play major roles in their lives. They realize the importance of discipline and their exploring minds begin to question everything. This is the time when the child starts experiencing the world of practicality with the outer senses and gathers his/her knowledge from the environment in a different manner and in different spheres. Whatever exposure is given at this time, the child absorbs into his being. This plays a major role in shaping the child's personality.*

*So, on this road of self-discovery, we – the children of Yellow group and the Diyas – embarked on our journey in the month of April 2017. What we are sharing in this report is a record of these children's growth during one of the projects undertaken in January–February 2018.*

## The Indian Army

### Why this project?

*The Diyas observed the children talking about army men and the armed forces. During their free play time, in the sandpit or in the garden, they spent their time making army base camps and fighting an imaginary army. Their discussions on the hardships faced by soldiers and their tough training inspired the Diyas to turn it into a meaningful project, 'The Indian Army'. The project generated much excitement among the children. The main aim was to inspire the children to develop the courage to embrace hardships like soldiers, and also to love and respect their country.*





## Aims

- To make the children aware of positive qualities of soldiers like discipline, respect, patience, struggle, teamwork, patriotism.
- To inspire and help the children develop courage and hardship like the soldiers.
- To nurture love and respect for the country.

## Objectives

- To increase the children's interest in work done by the armed forces.
- To help the children understand that the tough training teaches a soldier discipline, concentration and logical decision-making.
- To inspire in children the same 'never give up' attitude.

## Objectives for physical development

- Developing willpower while building up body strength, balance, agility and stamina.
- Overcoming physical fear.
- Honing hand skills (paper folding, cutting with scissors, painting).
- Displaying teamwork during playtime and while working in groups; also accepting decisions taken by the leader.

## Activities

An army-like drill was included in the morning exercises to improve body strength, balance, agility, endurance and stamina. This included the following physical activities, some of which were set up as obstacle courses in the junior park.

- Running: fast, slow, zigzag, running with body control, track rounds.
- Jumping: from a height, long distance (obstacle course: jumping off a wall, running on an uneven path, long jump).
- Crawling: on knees, creeping silently

like soldiers, crossing a tunnel.

- Climbing obstacle course: climbing trees, climbing and hanging from monkey bar, three repetitions on the park equipment (slide, balancing beam, monkey bar, cycle-tyre-bar jump sequence).
- Balancing exercises: on a thin line, at a height, backward, improving balance while cycling (individually and with a partner in the carrier).
- Soldiers attacking and saving people (imaginary games played by two teams).
- Rope climbing.
- Making army tanks, fighter planes and warships with paper.

## Objectives for vital development

- Developing discipline.
- Developing willpower.
- Developing courage.
- Inculcating sensitivity for partners.
- Increasing awareness about soldiers' bravery.
- Inspiring sense of rhythm and pride while marching and singing patriotic songs.
- Building love for real-life stories of soldiers awarded for acts of bravery.

## Activities

- Listening to the stories of Param Vir Chakra awardees.
- Watching videos featuring the Indian army.
- Marching collectively while reciting slogans.
- Learning the patriotic song 'Kadam kadam badhaaye jaa'.
- Learning the war cries of different regiments.
- Making rules for the group and following them without constant reminders.
- Being sensitive and supportive towards friends during work and play time.
- Resolving differences without disharmony in the environment.



## Objectives for mental development

- Developing observation faculty.
- Developing thinking faculty.
- Developing imagination.
- Developing questioning ability.
- Developing reading and writing skills.

Symbol

प्रतीक

Award

पुरस्कार

Trench

खाई/ गड्ढा

Mission

लक्ष्य

Nation

देश/ राष्ट्र

National

राष्ट्रीय

## Activities

- Participating in a presentation on 'Indian armed forces' by Col. Vivek Bakshi.
- Learning the names of different regiments of the Indian Army.
- Watching various documentaries and videos about the army.
- Interacting with Col. Vivek Bakshi.
- Visiting the Air Force Museum.
- Reading and writing about the army (branches, equipment, weapons, fighter planes, guns and tanks).
- Vocabulary building in Hindi and English (words related to the army).

- Taking dictation, filling blanks, making sentences, solving worksheets and crosswords.
- Reflecting on their learning during the project.

## Objectives for psychic development

- Developing love and respect.
- Getting aware of inner friend and inner enemy.

## Activities

- Discussing what they feel about soldiers.
- Discussing about the inner friend and the inner enemy.

Indian Armed Forces भारतीय सशस्त्र सेना

Indian Army भारतीय सेना

Indian Navy भारतीय नौसेना

Indian Air Force भारतीय वायु सेना

Commander सेनाध्यक्ष

Soldier सैनिक

Bravery वीरता

Heroism बहादुरी

Gallant वीर

Courage साहस

Regiment सैन्यदल

Troop दल

Platoon दस्ता/ दल

War युद्ध

Peace शांति

Border सीमा

Defence रक्षा

## Group Environment

The display board was decorated with the Indian flag and pictures of army vehicles, symbols of different regiments, marching soldiers and picture cards of Indian armed forces (Army, Navy, Air Force). Relevant story books were also placed in the group.

## Resources used

Physical resources: An Indian Army officer was invited.

Internet resources: Stories about Param Vir Chakra awardees

([www.scoopwhoop.com/inothernews/army-men-bravery-stories/#.1ukwieb4y](http://www.scoopwhoop.com/inothernews/army-men-bravery-stories/#.1ukwieb4y))

Video on NDA Academy

([www.youtube.com/watch?v=HwAIGSKeynY](http://www.youtube.com/watch?v=HwAIGSKeynY))

Video on Siachen Indian Army

([www.youtube.com/watch?v=SPzWuaxroDo](http://www.youtube.com/watch?v=SPzWuaxroDo))

Indian army's special commando forces

([www.youtube.com/watch?v=WAFuCsJ8xKA](http://www.youtube.com/watch?v=WAFuCsJ8xKA))

Top five regiments of Indian Army  
 ([www.youtube.com/watch?v=iGpJvLJSEmU](http://www.youtube.com/watch?v=iGpJvLJSEmU))  
 Training of NSG Commandos  
 ([www.youtube.com/watch?v=Xf3-L41\\_hcI](http://www.youtube.com/watch?v=Xf3-L41_hcI))  
 Best Indian Weapons in the world  
 ([www.youtube.com/watch?v=MndooMyZC\\_I](http://www.youtube.com/watch?v=MndooMyZC_I))  
 War cries of different regiments

([https://en.wikipedia.org/wiki/List\\_of\\_regiments\\_of\\_the\\_Indian\\_Army](https://en.wikipedia.org/wiki/List_of_regiments_of_the_Indian_Army))  
 National flag (for the display board)  
 Black and white line images of army vehicles,  
 symbols of different regiments, soldiers  
 marching, picture cards of Indian armed  
 forces

## Beginning of the project

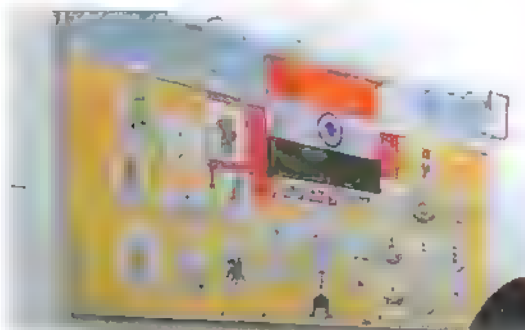
*The project was a journey to an unknown land for all of us. Before working on this topic, we Diyas had limited knowledge about the army. The process started with us first, as we read about the army and watched documentaries about it. Then we had to reflect about how much a six-year-old child can absorb, what to reveal and what not, since the topic is so vast and had to cover three branches of the forces: Army, Navy and Air Force. Each has different titles, roles to play and areas to protect. Skills required and equipment used are different. We decided to focus our attention on the army and areas where troops are stationed. We also had to think about each child's receptivity level, especially about the children who are very sensitive and get disturbed when exposed to fighting and violence. Yet, somehow, we launched the topic with a lot of enthusiasm.*

## Activities

We took pictures from the Internet and tried to create an environment starting with the display board. Before initiating the topic, we had encouraged the children to watch the Republic Day parade on 26 January. Many children saw the parade live while some watched it on television. It was a pleasantly surprising Monday for them when they saw the pictures up on the board and found out that they were going to work on topic of 'The Indian Army'.

The initial interaction was to understand what they knew or thought about the

army. We discussed the Republic Day parade, and all the children shared their observations and likings. Four things were clear to us. First, they liked the heroism and courageous spirit of the soldiers; second, they liked the outfits and smartness of people in the army; third, they were fascinated by the weapons; and fourth, they were aware of the conflict between India, China and Pakistan. In their imaginary play, they made traps to attack these enemies. They played camouflage games and hid among shadows, trees and rocks.



One child, who has an uncle in the forces, had visited Ladakh a couple of times. He shared all the information he got from his uncle with pride. This motivated the group immensely. We all listened to him with rapt attention.

Stories and video clips of soldiers in training ignited the hero-worshipping quality in the children. Every day, during morning games, they also indulged in many vigorous exercises. This topic engulfed their consciousness so much that after completing all the obstacles three times (balancing beam, slide, running, bar crossing, jumping from tyres, hurdles), one or two would declare: “दीदी, हमारा NDA का training पूरा होने जा रहा है”.



They also loved to play ‘Army Game’ in the neem grove, acting like soldiers on a mission. The imaginary play of our ‘little soldiers’ gave us a glimpse of their admiration for the real soldiers. We used to see two or three children coming to the group wearing camouflage costumes. One day, a child came in a black costume. We did not pay attention. After some time he asked, “आपको पता चल रहा है मैं आज black cat commando बन कर आया हूँ?”

The children were totally living in the army consciousness during that time





During games time on some days, we could hear a few hiding behind cut tree branches, saying, “हम अभी अपने आपको camouflage कर देंगे, दुश्मन हमें देख नहीं पाएंगे ” They were seen making army base camps, locating and defusing bombs, going on missions and getting ready to attack Pakistan and China. Every day, one child took charge of the operation. The process by which children named the operation was interesting to observe, like ‘Mission Mountain’. The way a few children held small sticks as guns was fascinating. During the mission, they did not care about lying low on the ground. They were totally living in the army consciousness during that time.

To give their play a direction, we showed them video clips of army soldiers helping people in flood-hit areas. They understood that soldiers not only fight but they also help people in times of calamities.

This motivated them to play games where they had to help their friends.

Cycle riding was another important activity. They were taken for cycle rides in the campus every day. Riding and balancing the cycle was one of the life skills that many children learnt during that time. Cycling around the big and



narrow tracks, and through uneven terrain in the neem grove was the most exciting experience for them. They learnt the skill of balancing the bicycle while taking an injured soldier friend (in the carrier) to the ‘Army Hospital’. This helped them become more confident physically.







We invited an army officer of the Gurkha Regiment, to meet the children. He answered the children's queries on the army. Children recited all the war cries they had learnt. He told them about the ordeals (related to food, rest, physical injury) soldiers face in deserts and snow-capped mountains (like Siachen) while

trying to guard the country. He showed them a presentation, which gave them a clear picture of different aspects of the army. It enhanced our (both children's and Diyas') knowledge mentally, and we also felt gratitude towards all that the

The children with the army officer of the Gurkha Regiment





army does for the country. This presentation was shown to three groups of children.

The stories of Param Vir Chakra awardees inspired the children immensely. Every day, they would listen to the stories with rapt attention. They admired the photographs of gallant fighters and liked to memorize their names.

In the area of hand skills, they worked hard to make warships, tanks and aeroplanes with paper, taking care of minor details such as masts, wheels and radars. They gave names to their warships: 'Falcon', 'Cobra', 'Scorpion', 'Eagle X', and so on. They have developed their skills at drawing illustrations of different kinds of vehicles used by the army.

Children have also developed their vocabularies through reading and writing. They have learnt the song 'Kadam Kadam Badhaaye Ja'. During the project, children visited the Air Force Museum, where they saw pictures of many Param Vir Chakra awardees and the fighter planes that were used during the Indo-Pak war.



Towards the end of the project, some children reflected on their experiences and wrote about what they learnt.

**S:** "I like the Gurkha regiment slogan, 'Jai ma kaali, aayo gurkhali'. I learnt that when soldiers get injured, they keep on fighting without caring for their injury. I went with my friends to the Air Force Museum. मैंने सीखा सैनिक बहुत साहसी होते हैं, मैंने सीखा अच्छे से बात करना, मैंने origami model सीखा, मैंने देखा army की training बहुत कठिन होती है, NDA की training सबसे ऊपर होती है। मुझे army topic बहुत अच्छा लगा।"

**A:** "मैंने army विषय में सीखा अगर आप मेहनत नहीं करोगे तो आप कुछ नहीं कर पाओगे। Army के सैनिक अपनी परवाह न करके देश को बचाने की कोशिश करते हैं। मैंने army के विषय में काम करते हुए बहुत सारे नारे सीखे। Army के सैनिक सिर्फ लड़ते नहीं, खेल और पढ़ाई भी करते हैं। जो army वाले officer आए थे उन्होंने हमें सिखाया कि अगर आप बर्फ के अंदर दब जाओ तो आप कैसे बाहर निकलोगे। हम, army के विषय में काम करते समय, एक



बार वायु सेना संग्रहालय भी गये थे। Army के सैनिकों को बहुत कठिन प्रशिक्षण मिलता है।

R: “मैंने army topic से सीखा पाकिस्तान के सैनिक जब मारते हैं तो भारत के सैनिक भी मारते हैं। सैनिकों को boxing सीखना पड़ता है। मैंने सीखा कि बर्फ में प्यास लगे तो क्या मुँह में डालना चाहिये। सैनिकों को बहुत मुश्किल काम मिलते हैं। मैंने सीखा कि वो कैसे ताकत लगाते हैं। मैंने सैनिकों का नारा सीखा। मैंने सैनिकों की तरह shooting सीखा। मैंने सियाचिन का पदक देखा। मुझे Gurkha Rifles ज्यादा पसंद है।

V: “Army वाले घायल होकर भी लड़ते हैं। मैंने army वालों से discipline सीखा। मैंने NDA की (खेल के समय पर) training में सीखा कि army वाले बहुत मेहनत करते हैं। उनसे मैंने सीखा कि लोगो को बचाना चाहिए। मैंने उनसे शांत रहना थोड़ा-थोड़ा सीखा। मैंने army से जी भर कर खेलना सीखा। मैंने उनसे साहसी बनना सीखा। Army वाले सिर्फ लड़ते नहीं, वो हमारी सुरक्षा भी करते हैं। Army वाले बहुत अच्छे होते हैं। Army officers साहस दिखाकर पदक लेते हैं।





### Objectives achieved

- Developing willpower while building up body strength, balance, agility and stamina.
- Overcoming physical fear.
- Honing hand skills (paper folding, cutting with scissors, painting).
- Displaying teamwork during playtime and while working in groups.
- Developing willpower.
- Developing courage.
- Inculcating sensitivity for fellow partners.
- Increasing awareness about soldiers' bravery.
- Building love for real-life stories of soldiers awarded for acts of bravery.
- Developing thinking faculty.
- Developing imagination.
- Developing reading and writing skills.
- Developing love and respect for one's country.

### Challenges

The most difficult part of the project was to narrate stories of Param Vir Chakra awardees. We usually share stories with happy endings, and avoid stories of violence, fighting and death. In telling the stories of brave soldiers, even if we tried to avoid the 'death' aspect, a few active children would express it openly. It was very difficult for the gentle ones to take it. They hardly understood why this award is given. A would constantly ask, "दीदी, क्या हुआ उनको?"

We found difficult to motivate some children, who knew about the conflicts of India with Pakistan and China, to explore other perspectives than of 'attacking the enemy'. They were more into the war mode than in the mode of appreciating in their heart that the army also helps its country during calamities.

## Overall evaluation of the learning process

This project was a new experience and topic for all of us. The interest of the children as well as the Diyas revealed many new things about the armed forces. The project exposed the children to many new and complicated words that they could instinctively understand even though they could not explain in words. They exhibited their knowledge of the complicated words, such as 'camouflage', in their games. This was indeed a happy time for us, as we observed that the children had taken charge of their learning as self-motivated learners.

The children regularly shared some information or news about what army men were doing across the country. They were aware of what was happening in the border areas and how the soldiers were undeterred by hardships.

Through exposure to many areas of experience, all of them understood that hard work, discipline and body control are important aspects in the life of a soldier. They learnt to deal with the physical, emotional and mental challenges that come up in their everyday lives. The best part was that they were totally captivated by the spirit of the Indian Army.

In one instance, where the child was deeply disturbed, we invoked silence and offered the space to the child with a prayer. Usually children find their own reconciliation in the course of time.



## *Reflections by the Diyas*

**R:** "This project was an inspiring topic for me. I was deeply touched when I read and saw all the documentaries related to the Indian army. More than it was for the children, it was probably a journey of my own being. While working on this topic, my whole focus was based on 'what are the things I can do in this topic'. Along with the children, I was also ignited with the spirit of the army. Even now, I often feel that all children of all age groups must work on this topic. It is one of the ways to increase patriotism in the younger minds. I will always be grateful to the soldiers of India's armed forces because of whom we lead safe, peaceful lives."

**L:** "This topic was new and unexplored. It had never crossed my mind that it could be taken up as a project, considering its vastness and innumerable aspects. There was much to know... Following the children's fascination, we became part of this journey. My awareness increased. I didn't know that each regiment has a different slogan! I became more aware of news about soldiers working or fighting relentlessly. When a stall with guns, missiles, grenades and other equipment was set up by a battalion at the Surajkund Mela, I was curious and excited to share the experience with the children. It was wonderful to read their reflections and be transported into their world."



## Water

*Why this project: In the month of July, the weather usually alternates between humid and hot. When it rained intermittently last July, children wanted to play in the rainwater. It was a wonderful opportunity for us to make this 'play' a meaningful 'learning' on the subject of water, one of the main life sources. Hence, this topic was selected.*

### Aims

- *To nurture in the children to a deeper understanding of water as a vital life source and important natural resource.*
- *To sensitize the children to the need for and uses of water, and to help them learn more about different sources of water.*
- *To hone the children's observation skills, spark their imagination and sharpen their thinking faculties.*
- *To expose the children to various scientific concepts related to water and its qualities in simple ways.*
- *To facilitate a sensory, immersive experience of the idea and concept of water, via sight, sound, smell, taste, and touch.*
- *To help develop the children's language abilities by expressing factual information as well as internal thoughts.*
- *To introduce the concepts of initial mathematics, especially measurement of a material, in this case water or liquid.*



## **Objectives for physical development**

- Development of strength.
- Development of awareness while drinking water.
- Development of hand skills (paper folding, paper cutting with scissors, painting).
- Ability to organize materials for experiments.

## **Activities**

- Games such as 'Fish and Net', 'Crocodile in the Water', 'rani, rani, kitna kitna pani', playing in rainwater, watering plants.
- Reminding the children to drink water once in the morning and once in the afternoon (ideally, finishing the water in their bottles), and at regular intervals in between, as needed.
- Learning to fold paper into shapes like boat, crocodile, tortoise, fish (three types), cutting and pasting shapes of water bodies with animals and plants.
- Enamel colouring (marbling).
- Collecting materials to differentiate between floating and sinking, dissolving and non-dissolving.
- Arranging the desks, cleaning the area, putting materials back in their respective places.

## **Objectives for vital development**

- Awareness of frequent changes of weather (and the body's reaction to different weather types).
- Awareness of different sensations and feelings (and the body's reaction to sound, touch and sight of water).
- Sense of rhythm in dance and song.
- Love for stories, songs and dance.

## **Activities**

- Discussion on how our bodies feel when it is hot and also when we get wet in the rain.
- Writing poems about summer and rain.
- Discussion on the colour of water in different places, the taste of water, the sound of rain, the touch of water, and what children feel when they see a river or sea or lake or pond.
- Dancing to 'water' music.
- Singing water-related rhymes, in Hindi and English.
- Recitation on water (in Hindi).
- Stories related to water.

## **Objectives for mental development**

- Development of memory.
- Nurturing the ability to think and express.
- Development of the faculties to observe, compare and judge by finding out similarities and differences between things.
- Development of imagination.

## **Activities**

- Discussing the uses, needs, and sources of water.
- Playing memory games and drawing pictures of different animals, flowers, and plants that live in water.
- Discussing differences between water bodies such as seas, rivers, ponds, lakes, and oceans, and drawing their images.
- Observing the change of water into steam and ice.
- Observing the shape of water in various receptacles.
- Discussing the colour of water in different coloured bottles.
- Floating-sinking with materials collected by the children.
- Soluble-insoluble experiments.

- Extracting colours from coloured chocolates.
- Placing a mirror in water (rainbow experiment).
- Making bubbles with soap water.
- Observing colours of water by passing them from one glass to another.

Developing reading and writing skills in Hindi and English

### Activities

- Writing songs about water.
- Reading and writing words in Hindi and English.
- Filling in the blanks, dictation, sentence construction, crosswords, matching images to words.
- Writing a poem on 'rain'.
- Describing 'what would happen if I see water everywhere around me (both positive and negative aspects)'.
- Watching documentaries titled Venice, City of Water and Boathouses in Dal Lake.
- Reflecting and writing about 'what I have learnt in this topic' in Hindi.
- Group Environment: Pictures of various sources of water and words related to water (in Hindi and English) were displayed in the group. For many Hindi words, synonyms were given, such as:

pool - तालाब, सरोवर,

spring - झरना, धारा, स्रोत,

sea - समुंदर, समुद्र, सागर

Developing the mathematical estimation ability

### Activities

- Understanding volume of water by placing it in variously shaped containers.
- Estimating of the heaviness or lightness of objects in 'floating and sinking' activity.



Group Environment

### Objectives for psychic development

- Joy of feeling the touch of water.
- Centring activity.
- Reciting the prayer.

### Activities

- Playing in the rain.
- Drawing with a decorated flowerpot.
- Learning the prayer of 'rain' by the Mother.

### Beginning of the project:

It all began with the children playing 'Fish and Net' and 'Crocodile in the Water' in games time. In the group, seeing the changes in the display board, the children realized that they would be working on the topic of 'water'. On the first day, children shared their thoughts, verbally as well as in writing, about the use of water in their daily lives. They also discussed various sources of water. To whet the children's curiosity and nurture their skills of observation, various experiments were conducted in the first few days. While children enjoyed the simple experiments related to water, they were also exposed to various scientific concepts. Some of them are explained in the following text and images.

### **Floating and Sinking**

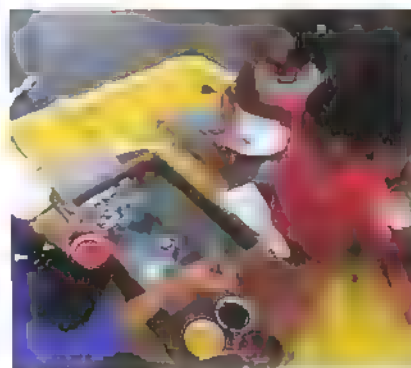
The children collected an array of objects from the group and the garden. They were asked to think carefully and separate the objects into two categories: objects that they thought would sink in water, and objects that they felt would float. It was a surprise for them to see some of the objects behaving differently. They were encouraged to analyse what they had observed.

### **Soluble and non-soluble things**

Items like washing powder, oil, clay, sand, paper, watercolour, turmeric, chilli powder, salt, sugar, jaggery, and lemon juice were used to demonstrate this aspect. The children observed that the things that become one with water i.e. they cannot be separated after mixing are soluble. Here again, they tried to mix different things. They also reflected on drinks and foods in their lives. They could describe in detail about soluble and non-soluble ingredients in lemon water, such as salt, sugar and black pepper. It was demonstrated that when a whole chilli or a piece of turmeric is put in water, it does not dissolve. But when the chilli and turmeric are ground and added to water, they dissolve. When clay and sand were mixed in water, all the children thought that they had dissolved. So we waited a while till the water became still again. Then they saw how, instead of mixing, clay and sand settled at the bottom of the water container.

### **Marbling**

This activity was a continuation of the experiments with soluble and non-soluble items. Children added watercolours to water, and saw that they were mixing in with the water. Then they put in oil and enamel paint and noted that those did not mix. They were fascinated to see the patterns created by the enamel paint. More observation happened when they did marbling with the enamel paint.





### Water changing state

Children held their palms over hot water to see how steam could become water again. They also placed water in the refrigerator to see how it turns into ice after some time.

### Colour travelling

This simple experiment showed children how colour can travel from one glass to another with the help of tissue paper! They also observed how new colours are formed by mixing two colours.



### Colour mixing

Colour-coated chocolates were placed on a plate and water was sprinkled on them. The children were overwhelmed to see the colourful streams of water flow to the centre of the plate and make new colours. Some children tried this at home too.



### Understanding water pressure

After making two holes in a bottle, the children observed the speed and pressure of water flowing from different heights. They saw that each jet of water fell at varying distances from the bottle.

### Colour and shape of water

After seeing a variety of water experiments for almost one week, children shared their thoughts on various aspects of water. They kept water in various coloured bottles to see the changing colours. One child said, "पानी को जब दूर से देखती हूँ तो नीला दिखता है और पास से देखती हूँ तो लगता है कि उसका कोई रंग नहीं है". They also kept water in different shapes of containers and saw that water took the shape of its container. Some said that water does not have any shape while some others said that water has many shapes.





### **Making a rainbow**

This activity was done near the dining hall by reflecting sunlight through a looking glass in water. Each child experimented with the mirror and tried to make a rainbow on the ceiling above.

### **Making bubbles**

This was a fun activity to make the water fly by trapping air into it. Children were extremely happy to do this experiment. They used their full energy to make the bubbles hill as big as was possible. After doing it individually, they came up with the idea of bringing their glasses together and seeing how big the bubbles became. They spent a whole afternoon doing this.



### **Taste and touch of water**

When the taste of water was discussed, many children said that it does not have a taste. About touch, all the children said: "We feel cool when we touch water."

By comparing the summer and rainy seasons, the children displayed observation powers and honed their ability to spot differences. Conducted in the months of July and August, which are both hot and humid, this was a truly experiential learning process for the children.

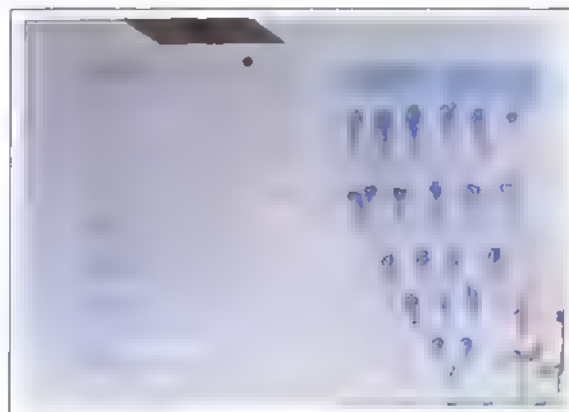
Enjoying a rain shower in the garden is something that all the children looked forward to. They would sing songs to invoke the 'Rain God'. When the rains showered down on them, they were unable to contain their excitement. They ran about barefoot, chasing each other, stretching out on the wet grass and jumping in the puddles. They even watched an earthworm crawl out when the rainwater flooded its home. The touch of rainwater refreshed them. They wrote songs about rain and water. Some of their poems are given here as examples.



टप-टप-टप बारिश आई, हमको पानी देने आई  
 टप-टप-टप आवाज बढ़ गई,  
 मूसलधार बारिश शुरू हो गई  
 नाचे मोर, भीगे बच्चे, चलो-चलो खेलते हैं,  
 चलो-चलो नाचते हैं  
 बढ़ जाओ हमारी बारिश, रुक जाओ हमारी  
 बारिश, आ जाओ हमारी बारिश  
 मेंढक बोला टराओं-टराओं, हम सब बोले  
 आओ-आओ  
 कौंचे बोले काँच-काँच  
 खेल-खेल कर, नाच-नाच कर गीले हो गए हम  
 सब  
 मुझे बहुत मज़ा आया।

- by A

पानी हमारी जरूरत है, पानी का कोई रंग नहीं  
 होता,  
 बादल पानी बरसाते हैं, वर्षा ऋतु में पानी की  
 बौछाड़ होती है  
 आज मूसलधार वर्षा होगी।  
 पानी-पानी-पानी, बारिश की है रानी  
 बारिश बनता पानी गिरता, बहुत जरूरी है पानी



पानी का कोई रंग नहीं, पानी का कोई स्वाद नहीं  
 पानी-पानी-पानी, बहुत जरूरी है पानी।  
 बारिश-बारिश-बारिश, सबसे सुन्दर बारिश  
 फूलों को सुन्दरता देता, पेड़ों को हरियाली देता  
 हमें पानी ही पानी देता, सबसे सुन्दर बारिश,  
 मूसलधार बारिश।

- by K

In the water there are tips of fishes,  
 The fishes swim swish splash,  
 When it rains the water rises,  
 Water is incredible.

- by A



## Language Work

Through language games, the children learnt about creatures and flowers of water. They learnt two related rhymes in English: (1) 'I hear thunder, I hear thunder' and (2) 'Rain on the green grass, rain on the tree'. They also sang a few rhymes in Hindi.

They learnt to recite the following in Hindi.

पानी पानी पानी पानी, जीवन का आधार है पानी  
गर्मी से राहत दिलवाता, हर प्राणी की प्यास  
बुझाता

The children would recite The Mother's 'Prayer for Rain' daily, in the aspiration that they would get a chance to play in the rain!

"Rain, Rain, Rain, we want the Rain..."

The children developed their vocabularies in Hindi and English via worksheets such as matching pictures to words, solving crosswords, filling in the blanks, and making sentences with relevant words. The words were given to them in the following format:

water- पानी, जल, नीर  
well- कुँआ

They learnt new words and used them in their written work, both in Hindi and English.

## Developing Imagination

One day, the children were asked a question, "What would happen if you do not get any water?"

Children gave different responses, such as:

"After games, when we return, we will not be able to walk."

"We will all be unconscious. We will feel

dizzy."

"We will not get energy to walk."

"Trees won't grow anymore. Trees will die."

Just after that, they were asked to imagine: "What would happen if there is water all around you?"

Children reacted with both positive and negative effects of such an occurrence. Most children were focused and expressed their thoughts very creatively. Some could imagine only the positives whereas, for others, it was difficult to think of any positives:

To the question "अगर हमारे चारों ओर पानी होगा तो क्या होगा?", he expressed, "मैं तैर-तैर कर चला जाऊँगा या फिर एक कोने में छुप जाऊँगा।"

— by S

"हम अच्छे से पानी पी पाएंगे, हमें तालाब नहीं जाना होगा, हम तैरकर सबके घर जाएंगे, हम बारिश में भीग सकेंगे, हमें बहुत मज़ा आएगा, हम बहुत अच्छे से तैर पाएंगे, हम बस पानी लेकर चेहरा धो लेंगे। कुँआँ अच्छे से भर जाएगा, पेड़ को हरियाली मिलेगी, हमें पौधों को पानी नहीं देना होगा।

हमें हर जगह जाने के लिए तैरना होता, हम डूब जाते, कुछ लोग मर भी जाते, घर नाव जैसे तैरने लगेंगे, पूरा घर पानी में भर जाएगा, पूरा शहर में पानी से बाढ़ हो जाएगी, बहुत बारिश होएगा, आप हर जगह जाने के लिए swim suit और goggles पहनोगे, तालाब पानी से भर जाएगा, पानी बहुत ठंडा होएगा।"

— by M

हमारे चारों तरफ पानी होगा तो हम कुछ भी नहीं कर पाएंगे और हम डूब भी सकते हैं। हम पानी के अंदर साँस भी नहीं ले पाएँगे और हमारी गाड़ी लुढ़क-पुढ़क हो जाएगी तो हमें बहुत मुश्किल होगी। हम सब गीले हो जाएँगे।

हम बहुत सारा पानी पी सकते हैं और पानी में तैर भी सकते हैं और अपने कपड़े, फल, सब्जियाँ अच्छे से धो भी सकते हैं। हमको ज्यादा पसीना भी नहीं आएगा और फूल-पौधे अच्छे से जी पाएँगे।

— by I

The children watched two documentaries related to water. In the one titled 'Venice, City of Water', the big buildings of Venice really surprised them. In 'Boathouses in Dal Lake', they learnt how people made boathouses that float on the Dal lake in Srinagar in Jammu and Kashmir. They also saw pictures of how people helped each other and, taking things from one place to another during floods.

### Hand Skill Work

The children made figures of tortoises, crocodiles and fish by cutting, pasting as well as weaving paper.

### Watering Plants

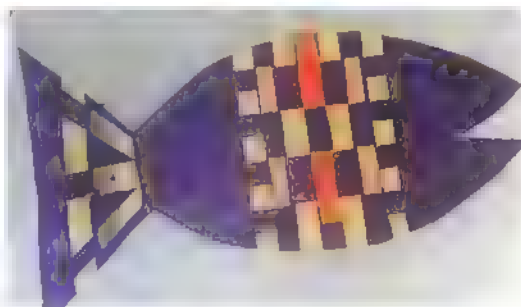
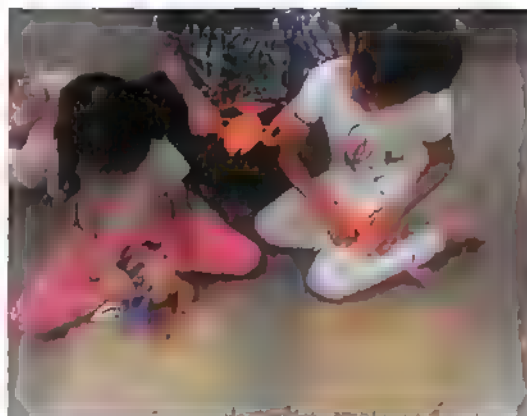
The children developed the habit of watering the plants, every day after lunch (during dry spells).

### Initial Math

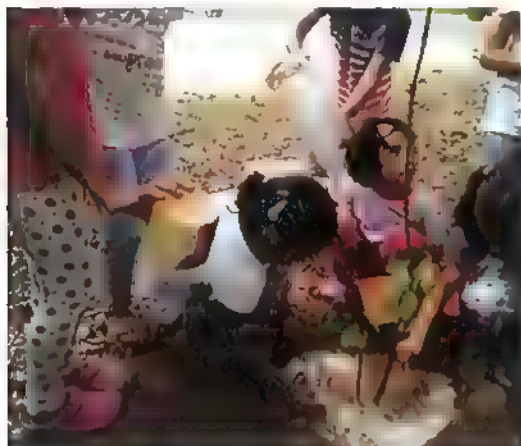
In the floating and sinking activity described earlier, the children could deduce that whether an object floats or sinks depends on its weight. Children also learnt about shapes by placing water in containers of different shapes.

### Evaluation

Evaluation was done through writing. The question given to the children was: "पानी के विषय में काम करने के बाद आपने क्या सीखा?".



Some children wrote at length while others did not write in much detail; the latter could express their thoughts better orally. Some of their responses are recorded here:



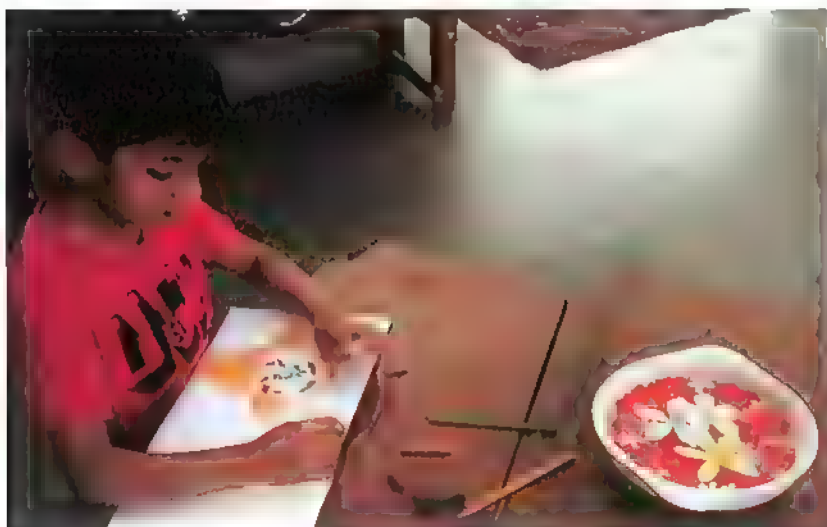
### Centring Activity

This activity was done during concentration time. Each child sat with a decorated pot having water

and flower in it and drew the picture on the paper. All children were quite focused while doing this centering activity. It was a deeply engaging

activity. Each

child engaged from that activity quietly settled from within. We left them to live the moment.



“पानी के विषय में मैंने गाना लिखा और गाना सीखा, पानी के बारे में नये शब्दों को सीखा, बारिश में भीगा, पौधों को पानी देना सीखा, पानी में क्या डूबता है और क्या तैरता है वह

देखा, पानी में क्या घुलता है और क्या नहीं घुलता है वह देखा, detergent से बुलबुले बनाना सीखा, हमने chocolate को पानी में डालकर कैसे इन्द्रधनुष बनाते हैं, वह देखा।



धरती में पानी भर जाएगा तो क्या होगा और धरती में पानी नहीं होगा तो क्या होगा, उसके बारे में सोचकर लिखा, marbling painting करना सीखा, पानी के बारे में कहानी सुनी, पानी को waste नहीं करना चाहिए, पानी का कोई रंग नहीं होता, पानी का कोई आकार नहीं होता, पानी को कोई स्वाद नहीं होता और पानी के बिना हम जी नहीं पाएँगे, ये सीखा।”

– by A

#### Resources used

Physical resources: Enamel paint and container for marbling, big container for floating and sinking experiment, small mirror for rainbow experiment, soap water, paper, chart of water animals, pictures of water bodies (sea, lake, river, spring, well, pond, ocean), flash cards (words), containers of different shapes and colours, colour-coated chocolate, tissue paper, glasses, plates, bottles, washing powder, oil, clay, sand, paper, watercolours, turmeric (powder and piece), chilli (powder and whole piece), salt, sugar, jaggery, lemon juice

Books from the library: Little Snow Bear (acc. 20800), The Rainbow Slides (acc. 25551), A Story About Water (acc. 25555), Little Dolphin's Big Adventure (acc. 20754)

Books from the group: Drip-Drop, पानी-पानी-पानी, सूरज का रुमाल, बारिश

Internet: Venice, City of Water ([www.youtube.com/watch?v=6kfnAuS5Tsc&t=318s](https://www.youtube.com/watch?v=6kfnAuS5Tsc&t=318s)), Boathouses in Dal Lake (<https://www.youtube.com/watch?v=zoz3bUZlKeo&t=2s>)

Three worksheets

#### Hindi recitation on “पानी”

(<https://www.youtube.com/watch?v=4EVDJXiwooE>)

Black and white lined images of river, sea, ocean, pond, pool, well, lake, spring, were shown to children, which they coloured and displayed on the group's main display board.

#### Evaluation of the learning process

All the children were deeply involved with all aspects of the project. They could engage in a variety of activities. Through their written reflection at the close of the project, I felt that they understood some of the concepts well, especially those explained through experiments such as floating-sinking, soluble-insoluble, bubble making, colour-coated chocolates and marbling. The children still remember the words introduced to them through this topic. They use this expanded vocabulary in their new writings.

#### Objectives achieved

Observation, thinking and imagination ability has developed (curiosity to see what is happening in the experiments). Ability to spot similarities and differences between two things is higher (development of comparison and judgement faculty).

Reading skill in Hindi as well as English was strengthened, and vocabularies expanded (new words in conversations).

Awareness about frequent changes of weather, as well as the body's reaction to different weather (sweating in humid weather, feeling cool in rainy weather) is displayed and clearly expressed.

Strength has developed through games like 'Fish and Net', 'Crocodile in the Water', 'rani, rani, kitna kitna pani' and

playing in rainwater and watering plants.

There is a development of awareness while drinking water.

Hand skills are better (paper folding, cutting with scissors) now.

Joy of feeling the touch of water is evident.

*Challenges and scope for improvement*  
Though examples were used to clarify the difference between water bodies (sea, ocean, river, spring, pond, lake), many children did not understand the concept. They could relate more with what they have seen themselves, such as a pond, a

well or the sea. The differences between sea and ocean, river and spring, pond and lake confused them.

While writing in Hindi, very simple words were spelt incorrectly. Many children found it difficult to remember the spellings of English words too.

In the floating and sinking experiments, children followed each other instead of locating new materials on their own. Hence, we could only explore a few objects and not a large variety, as desired.

More activities on measuring volume by using water should have been included.

### *Reflections by the Diya*

I was deeply involved in this project with the children. All the time, I was thinking about what else could be done with the children. Many concepts were new to me too. Trying out the experiments myself while planning to execute them with children was very interesting. I experienced success as well as failure and imagined the work and lives of the scientists who undertake complex experiments.

From the children, I learnt how to look at the positive side of everything. When I told them to imagine, "if you see water everywhere around you, what would you feel...", I was thinking only of the worst thing that could happen. However, many children wrote about the positive aspect of such an event. It widened my thinking. It also gave me the idea of showing the children how people live in a city surrounded by water.

I learnt a lot in this topic because I was focused and centred.

The second principle is that the mind has to be consulted in its own growth. The idea of hammering the child into the shape desired by the parent or teacher is a barbarous and ignorant superstition. It is he himself who must be induced to expand in accordance with his own nature.

There can be no greater error than for the parent to arrange beforehand that his son shall develop particular qualities, capacities, ideas, virtues, or be prepared for a prearranged career. To force the nature to abandon its own dharma is to do it permanent harm, mutilate its growth and deface its perfection. It is a selfish tyranny over a human soul and a wound to the nation, which loses the benefit of the best that a man could have given it and is forced to accept instead something imperfect and artificial, second-rate, perfunctory and common.

Every man has in him something divine, something his own, a chance of strength and perfection in however small a sphere, which God offers him to take or refuse. The task is to find it, develop it, use it. The chief aim of education should be to help the growing soul to draw out that in itself which is best and make it perfect for a noble use.

Sri Aurobindo, CWSA, Vol. 1, p. 384

## Food and taste

### The beginning

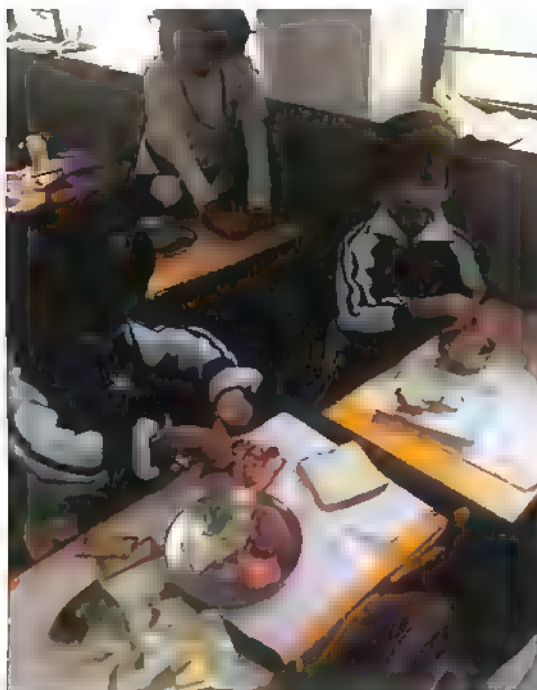
*Children to develop their sense of taste.*

*Why? Children become aware of the world and everything in it as their senses begin to develop. New and exciting sensory inputs ignite the natural curiosity of the children and a lifelong journey of learning begins. The primary aim of education listed by Maria Montessori is 'sensory refinement'. Opportunities for exploration of their senses help children to form perceptions and opinions. A state of mindfulness, which we aspire for each child, can only follow in succession. As teachers in Class II, we felt that the Montessori training received by our children up to Class I had provided them with a good base and they were ready for further exploration. This led to 'The Five Senses', being our choice of projects for the year. These projects also provide ample scope for integrating all the aspects of development. Our project on the 'sense of taste' is one of the five projects. Food wastage, is a significant concern in our world and sensitivity for those who go hungry needs to be developed at an early age. This could also be addressed through our project on food.*



### Objectives for physical development

- Developing eye-hand coordination (sandwich and lemonade making).

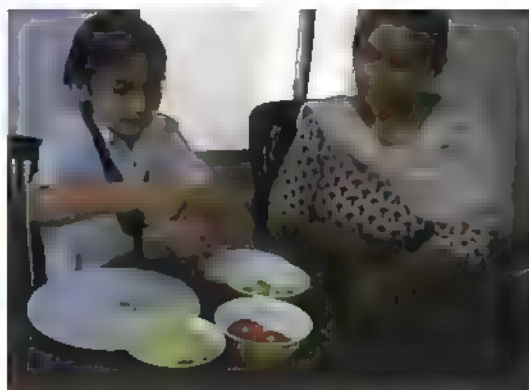


- Differentiating between different tastes (tasting different food items).
- Managing one's own work (serving oneself at the 'Class II Dhaba').



### Objectives for for vital development

- Exploring food choices and becoming aware of personal preferences.

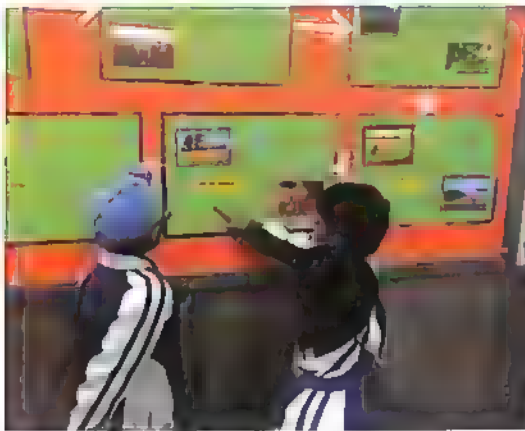


- Observing one's own food routine and becoming conscious of the healthy/un-healthy food items in our diet.
- Researching about how food is grown and developing respect for the farmer and all those who help bring our food to our homes.
- Creating craft items and art from empty food packets.

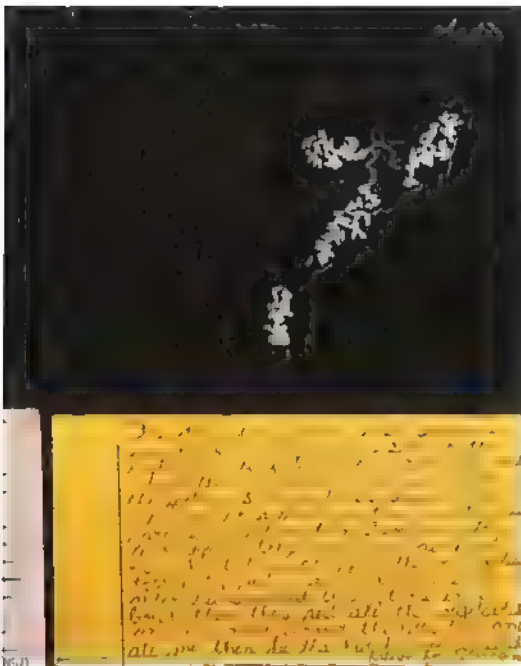
### Objectives for mental development

- Reading food labels to identify expiry date and Maximum retail price (M.R.P.).
- Tracing the journey of our favourite food from field to table.
- Understanding why healthy eating is important.





- Categorising food groups.
- Maintaining a food log.
- Marking the agriculture rich areas on the map of India.



#### Language Development

- Vocabulary in English and Hindi.
- Listening and singing songs.
- Hearing and reciting poems.
- Watching short videos.
- Developing imagination and expres-

sion by writing poems, plays and stories and presenting them before others.

- Sequential writing of a simple recipe.

#### Math

- Buying food from the school canteen and checking the bill.



- Shopping for groceries (addition, subtraction and multiplication).
- Demonstrating multiplication with sugar cubes.
- Using tally marks for maintaining the personal food log.

#### Objectives for psychic development

- Eating peacefully and being mindful while eating.
- Saying a prayer and feeling grateful for the food we get.

September and October are festive months and festivities go hand in hand with food. Children eagerly await the arrival of their favourite festivals and all the delicious food they bring. This was a good time to introduce the 'sense of taste'.

#### Outcome

The project was introduced by asking the children to maintain a daily food log and putting red/green dots for items which they considered healthy/unhealthy. The

logs were carried by them each day and comparisons were soon being made in class. Self reflection on their eating habits was a natural outcome of the process and we were happy to see tiffins filled with fruits and salads, leading to habits getting formed. Audio visual aids have a deep impact on children and short videos on healthy eating habits and table manners were shown.

By September, the children were conversant with Math operations of addition, subtraction and multiplication and these skills were applied in real life situations while shopping at the class grocery store and with real money in the school canteen. M.R.P. was checked and expiry was calculated to make sure that the food items were usable.

Food, like all resources, has to be respected and that there are many who do not have enough, was a realization which moved the children. An understanding that the farmer works hard and so do those who bring food to our table, was an eye opener. Working in the kitchen with their father was also a new experience and led to an appreciation of how much hard work goes into the preparation of each meal.

Creative activities were done. These included making of wallets for carrying the notes and coins which they traced from real currency. This also drew attention towards the minute details of the notes and coins of different denominations, which we always ignore. Tie and dye handkerchiefs were made with 'haldi' and beetroot and the benefits of using natural colours made from food items were discussed.

The meal in the ashram dining hall was an experience dear to all our hearts. Children experienced silent eating and taking only as much as was needed. They displayed maturity and sensitivity. Food was relished and not wasted at all, as they ate silently and peacefully. Washing their own plate was a new and exciting experience.

The 'Class II Dhaba' was organised, where children served themselves as per their choice.

The project culminated with a 'Food Fest'. A daily newspaper, publishing children's articles and with reporting being done by the children, carried information about the grand festival.





# DELHICIOUS TIMES



## Upcoming Flavour Fest South India for 2E

Planned for Wednesday, November 30, 2016

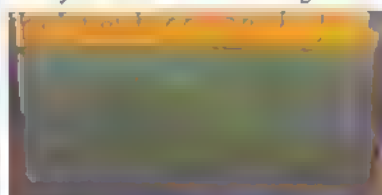
Reporter 1 | DT

**The M.I.S.:** Class II has planned to have a Flavour Fest celebrating the foods of India. Children are experiencing different tastes and doing some hands on cooking as well. Research and sharing of information is an integral part of the fest and craft activities are happening every day.



**Children excited for the Fest**  
Reporter 2 | DT

**1<sup>st</sup> floor Primary Wing:** This section is researching on the on the main food of South India. They have enjoyed eating dosa and chutney. Lots of fun facts are being shared

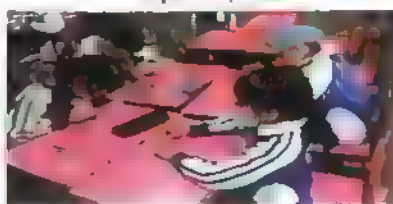


**LENDING A HAND:WORKING HARD TOWARDS THE FEST**

II A is mulling the opportunity to the fullest. They have their ice-cream and have eaten it too! The used cups have been re-cycled to create beautiful mobiles with colourful beads. Dad has contributed to the events as well by being an innovative chef.

## Jewellers at work

**Wrist bands / bracelets in II D**  
Reporter 3 | DT



**RISIER THAN THE REES**

**II D classroom:** Section D showcases North India and their topic is 'pulses.' In the ongoing journey, children have learnt the importance of eating healthy food and including pulses in their daily diet. The children became jewellery designers and designed their own ornaments

## Central India & wheat

**Wheat being grown in classrooms**

Reporter 4 | DT

The staple food of Central India is wheat and so it became the topic of research for II B. Children are creating wheat fields with fan folding and colouring wheat to design intricate rangolis.



## Mapping Is fun

**East India and 'rice' is IIC's research**

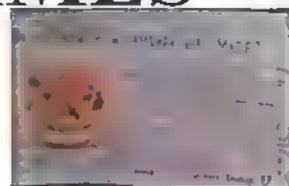
Reporter 5 | DT

Each child used a stencil to draw the outline of the map of India, located Eastern India and pasted rice





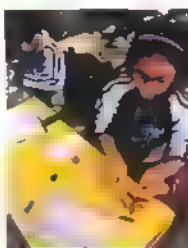
# DELHICIOUS TIMES



## New innovations in use of 'Pasta'

Kiddle reporter 1 | DT

For making the pasta I-card, ma'am gave us a sheet of paper, a ribbon and different coloured pasta pieces. On the sheet of paper we loved drawing and colouring our face. The paper had a little hole. We put the ribbon through the hole. Then we put the pasta pieces through the ribbon to complete our I-card. We loved it when ma'am said it was very nice.

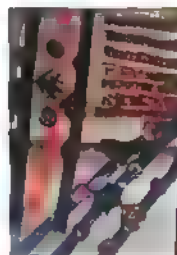


## Used cups recycled

### Pencil holders created from waste

Kiddle reporter 2 | DT

We first painted the cup and let it dry. The next day we pasted pulses and chana on it in a pattern. It took a day to dry. All the pulses and chana got stuck. This was an awesome activity.





# DELHICIOUS TIMES

Creativity reaches new heights, doodling now being done with raina seeds

Kathi rolls with cottage cheese stuffing prepared

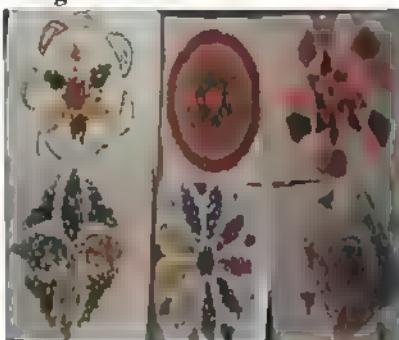
IIB grapples to give harvest festivals

## 'Rangolis' bring good luck to class II

Intricate designs created with rice

Kiddle reporter 3 | DT

Ma'am told us that 'rangoli' brings good luck and it is done on special days. We planned to draw rangoli on a piece of paper. Different designs were drawn by us and then we stuck the coloured rice in our rangoli. It was looking so beautiful and we loved when our teacher clapped for us.



## Eat according to hunger, neither more nor less

The Mother

He must be taught not to make his meals an occasion to satisfy his greed or gluttony. From one's very childhood, one should know that one eats in order to give strength and health

to the body and not to enjoy the pleasures of the palate. Children should be given food that suits their temperament, prepared in a way that ensures hygiene and cleanliness, that is pleasant to the taste and yet very simple.

Food For Thought

Eat for need, not for greed.

## LETTERS TO THE EDITOR

Dear editor,

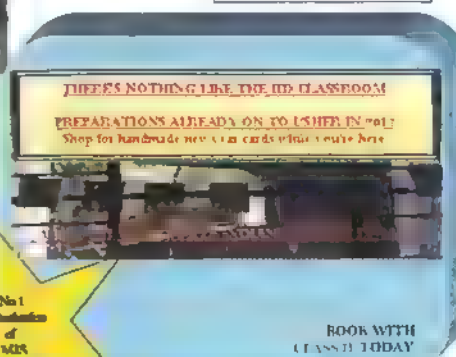
As a parent, I am excited to see the kids take the 'Taste' sense forward. Collectively, endless possibilities for learning about nutritional value and processes have been created. There has been optimal balance between research and craft.

The project could have also

included a segment to reinforce commitment to the environment. Last but not the least, really really appreciate the teacher's efforts for so seamlessly compiling the Taste Sense to make learning relevant.

Good Luck

A parent



ORGANIC FARMING INNOVATION AWARD



Saviours of the earth have been identified.

And we are honoured to award them.

1<sup>st</sup> Organic Leadership Award  
Awards for excellence in organic innovations

Recipients: IIB- wheat fields recreated  
Date: 30<sup>th</sup> November 2016



## WORDSMITHS FROM KERALA

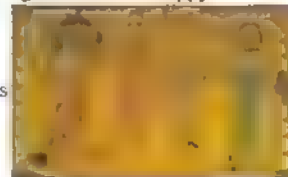
Arit and Aarav had moved to Kerala. Their house is near to the sea. There is a huge coconut tree. One day Arit came back to school. Aarav was very thirsty. He picked up one coconut and started drinking. Suddenly three monkeys came and stole the coconut. Aarav ran to the monkey. The monkey threw it to the other monkey. Then the monkey jumped into the sea and started swimming. Aarav called his friend and they made a plan. They gave the monkey a pile of bananas. They are happy now.



## IS THIS BITTER OR SWEET ??

One day I woke up in the morning and was feeling quite hungry. So I went in the kitchen and asked my mom if I could eat a chocolate. But when I took a bite of the dark chocolate, it tasted tasteless, so I took a bite of the biscuit that was sweet and it tasted salty.

Mother took me to the doctor who gave me medicine. The sweet biscuit tasted sweet again and I was happy.



## A COCONUT'S LIFE

Once upon a time there was a coconut. His name was Coco. He lived in Kerala. One day woodcutters came where Coco was staying. They cut the trees where Coco was living. Coco was scared. They took coconuts and Coco too. They started selling coconuts. Akshat's mom brought Coco and took out his husk. It was paining. Then she cut it and took the pieces we eat. Coco was feeling scared when Akshat was taking a bite of him. Coco was crying in Akshat's tummy.



## RUNAWAY FOOD

I woke and was surprised to find all the food away in my colony. They were too fast and the guard was surprised how the vegetables and dals were running away. I got an idea and put a big box in their way to trap them. Then I asked them why they were running and they replied because no one ate them and everyone wasted them. We eat junk so why should they stay. I replied that we also ate good food.



# Flavour Fest Fervour

## Children visit each other

Kiddle reporters | DT

Yesterday was our Flavour Fest. The class was decorated beautifully. I could find everything I made. We divided India into five sections.

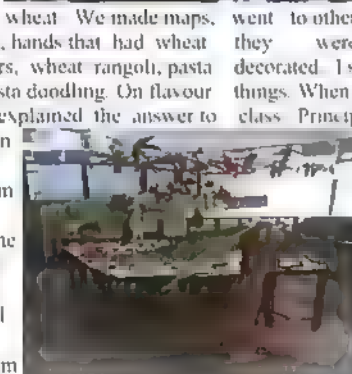
We had Central India. The state called Madhya Pradesh is in Central India. The staple food of Madhya Pradesh is wheat. We made maps, wheat fields, hands that had wheat on its fingers, wheat rangoli, pasta ID Card, pasta doodling. On flavour fest day, I explained the answer to one question when children from different sections came to our class. I explained the Principal ma'am and Renu ma'am

three-four things displayed in my class. Ma'am was very happy. It was almost time to eat and my mouth watered. I couldn't wait. When it was time to eat, I ate sambhar, idli, raita, poorie, rice and chhole. It was a delicious meal. I wished my parents came to the flavour fest. It was the best day at school.

On the Flavour Fest, I was very happy to go to school. When I reached school ma'am was changing the setting of the class.



The class was decorated with our wheat field, wheat rangoli, map and chart papers. I was very happy to sit with my friend on the front seat. We



went to other sections and they were beautifully decorated. I saw interesting things. When I came back to class, Principal ma'am and our class Ma'am came to our class. They saw our dhaba wala and things displayed. Ma'am asked questions. She was happy to see our class. I was happy to go to the doosri

da dhaba. My other friends went to the dhaba first. I got idli, sambhar, chole, puri and raita. Sambhar was spicy. I could not eat it. I was not able to eat all the things, so I kept them in my tiffin. I thought that I will give the food to my mother and father.

*"Children learn from anything and everything they see. They learn wherever they are, not just in special learning places." John Holt*

Children have various learning styles. They build their knowledge on their varied backgrounds and experiences. When children are interested in what they are doing and are able to use their areas of strength, they achieve at a higher level.

The project-based approach is a non-traditional education model that seeks to better prepare students for solving real-world problems and issues while teaching them what they need to know to succeed. It has been structured presenting students with multi-step problems to solve or asking them complex questions they are then required to answer.

The project of "Food" culminating in the Flavour festival of Class II focused on simulating real-world situations. There was an array of activities done: experimenting with their taste buds, researching in depth about cereals, pulses, food habits, cultural differences and similarities in food, eating habits, cuisines, eating etiquette, stories and anecdotes related to food in different parts of our country, to fun times cooking with dads and grandfathers.

(Mummies are always cooking, that is why 'cooking with dad' states a little fellow from Class II on being asked why the teachers asked for cooking with the father/grandfather.)

It is a cross-curriculum collaboration; it allowed students to move from one subject area to another. The fundamental skills of reading, writing, and math, combined with skills of teamwork, problem solving, research gathering, time management, information synthesizing, helped students overcome the boundaries between subjects. The Festival nourished their minds, evident from their in-depth knowledge of the food grains, their sources, how they reach our homes, healthy eating, etc. their bodies with the lovely dhaba food and snack parties, their creative needs... their art work, their stories displayed in the foyers, corridors and classrooms, and innumerable other intangible benefits.

We always talk of teachers and parents inspiring children. Flavour Fest proved that children too impact the adults in their lives. Students, teachers and parents exhibited equal enthusiasm and involvement making it a 'wholesome flavoured experience'.

Renu ma'am

## EXHIBITS UNVEILED

Class II to reassemble Flavour Fest art  
Reporter | DT

The exhibition opens for the students today and showcases art and craft from across sections.





The third principle of education is to work from the near to the far, from that which is to that which shall be. The basis of a man's nature is almost always, in addition to his soul's past, his heredity, his surroundings, his nationality, his country, the soil from which he draws sustenance, the air which he breathes, the sights, sounds, habits to which he is accustomed. They mould him not the less powerfully because insensibly, and from that then we must begin. We must not take up the nature by the roots from the earth in which it must grow or surround the mind with images and ideas of a life which is alien to that in which it must physically move. If anything has to be brought in from outside, it must be offered, not forced on the mind. A free and natural growth is the condition of genuine development. There are souls which naturally revolt from their surroundings and seem to belong to another age and clime. Let them be free to follow their bent; but the majority languish, become empty, become artificial, if artificially moulded into an alien form. It is God's arrangement for mankind that they should belong to a particular nation, age, society, that they should be children of the past, possessors of the present, creators of the future. The past is our foundation, the present our material, the future our aim and summit. Each must have its due and natural place in a national system of education.

Sri Aurobindo, CWSA, Vol. 1, p. 384

## Pet Animals

### **The beginning**

*We discussed with the children what our next project could be. We found that most were interested in animals so we decided to work around the idea of 'Pet Animals'. We hoped to utilize this activity to invoke empathy in the children, by exemplifying the importance of compassion and consideration towards other living beings. This is an important and valuable life lesson. Moreover, we also thought that because children are familiar with animals and have an innate compassion in them and will obtain the relevant vocabulary, the project would also help propel their language development.*

## Construction of Children's Ideas

*"Curiosity is the wick in the candle of learning."* – William Ward

Curiosity was a major attribute that helped the children execute this project. They asked numerous questions and sought several answers. Their love for animals also helped them choose this project. One of the children in the group already has a pet turtle. Talking with her about the pet and her sharing of day-to-day happenings about the turtle further motivated the children to choose the project theme. Some children were quite keen to keep a pet and care for it.

## Independent Learning

In language development, the focus was on honing their reading, writing and presentation skills, and creative abilities. They were given simple reading materials to improve their reading abilities. This helped them read, retain and recall information.

Discussions helped them assimilate the information and that understanding helped them when they wrote brief factual and creative pieces independently. The children were asked to share their thoughts, and this helped them improve their verbal presentation skills.

## Fulfillment of group needs through project

### Group needs

- Language development
- Hand skill development
- Invocation of empathy and sensitization to surroundings.
- Art and craft, drawing and model-making skills development.
- Planning and decision-making skills.
- Logical thinking and quick mental calculation abilities.



### Specific project elements that fulfilled group needs

- Exposure to good language.
- Activities to develop hand skills.
- Encouragement to interact with surroundings on a daily basis.
- Guidance given to children in planning and executing simple tasks.

### Setting up the group environment

- Words related to the project were put up on the display boards.
- Reading cards on informative texts,

## Diya's preparation

To be good facilitators, we did our homework by reading extensively on the topic. All the reading materials that we prepared were vetted so that the children

could read, understand and recall the information with ease. The songs and poems chosen were not only pleasing to the ears but also educational. Worksheets were prepared and remedial work done to iron out issues in language and mathematics.

short stories and poems were made accessible.

- Colourful, pictorial books were provided to sustain children's interest in the learning process.
- Write-ups, drawings and poems by the children were displayed.
- Models of pet homes were displayed.
- A pet rabbit was brought to the group so that children could observe its activities, understand it and interact with it.
- Games and puzzles were kept in the group for children to play with.
- Worksheets to reinforce concepts were kept handy for children to attempt.

### Aims

- To develop language skills
- To invoke empathy and compassion towards animals and people
- To develop decision-making skills

### Objectives

- Development of reading, comprehension, writing and presentation skills
- Development of independent reading with clarity and understanding
- Retention and recall of information
- Expression of ideas, views, opinions, and suggestions
- Development of independent writing skills with emphasis on the following:
  - Punctuation
  - Sequential writing

Factual writing

Descriptive writing

Creative writing

Answering skills

Verbal and written presentation

Completion of work on time

Legible handwriting and neat written presentation

- Practice in mental mathematics (quick calculations) for addition and subtraction
- Sharpening of logical thinking abilities
- Art and craft and model-making skills

### Objectives for physical development

- Development of fine motor skills



Model of pet house, poster and scrap book by children





- Improvement of flexibility in body
- Nurturing of organizational skills
- Emphasis on importance of time management

#### Activities

- Illustrating stories
- Making charts and posters to accompany their presentations
- Learning and practising some contemporary dance steps related to animal movements
- Arranging materials for their presentations

- Making models
- Preparing a maze with a partner
- Achieving neatness and legibility in handwriting
- Completing work on time

#### Objectives for vital development

- Nurturing of sensitivity towards animals
- Development of presentation skills
- Building confidence to express one's feelings with clarity and confidence
- Nurturing of love for stories and poetry
- Reflecting on one's work

#### Activities

- Interacting with an animal in the group
- Presenting one's work, both written and verbal
- Participating in discussions
- Reading and appreciating stories and poems

#### Objectives for psychic development

- Learning with joy
- Sensitivity towards other living beings



- Attempting reflective questionnaires

(comprehension skills)

### Activities

- Read and appreciate the qualities of animals
- Discussions based on stories to develop empathy towards animals/living beings
- Reflective questions on themes:
  - Why is this animal special?
  - How does this animal help us?
  - What pet would you want to keep and why?

### Objectives for mental development

- Observing the behaviour of pet animals
- Expressing ideas, views, opinions with Diyas and friends
- Retaining and recalling of information
- Developing reading, writing, and comprehension skills
- Enhancing creative thinking abilities
- Developing thinking skills

### Activities (English)

- Writing meaningful sentences related to the stories
- Writing short summaries of the stories
- Introducing sounds, colours and sizes of pet animals
- Composing a fact-based paragraph on a pet animal
- Composing a creative piece on a pet animal
- Illustrating a scene and describing it in their own words
- Reading, understanding and appreciating poems
- Answering context-based questions

### Poems for listening and memorizing:

#### Reading material

- I Have a Pet
- Do You Have a Pet?
- Sweet Little Pet
- I Love Little Pussy
- My Best Friend
- My First Pet
- Happy Dog, a poem by Flying Lemming

### Poems for reading and comprehension

- Cats
- My Best Friend
- My First Pet
- My Pet Cat
- Rabbit
- A Beautiful Peacock
- Joy, A Beautiful Peacock
- A Peacock Named Ed

### Reading list (stories)

- Kiki (by The Mother)
- The Dog in the Manger
- The Proud Peacock
- The Tiger
- Two Cats Facing Each Other on the Path
- Bell the Cat
- Matty the Cat
- My Pet Dog

*Stories and poems were taken from various websites. These were vetted and the content and language were modified to suit our children.*

### Activities (Hindi)

While working on this project children found that the names of some pet animals were based on sayunktakshyar (संयुक्ताक्षर).

We then decided to work on this aspect. Reading and writing sayunktakshyar (संयुक्ताक्षर). We worked on संयुक्ताक्षर and (पालतू जानवर)

### Activities:

- शृङ्खल=पञ्चरङ्ग जुड़े संयुक्ताक्षर शब्दों का संग्रहकर तालिका करना
- संयुक्ताक्षर शब्दों के बारे में जानकारी करना
- समूह में सारे बच्चों के नाम से संयुक्ताक्षर शब्दों को जोड़कर गाना बनाना
- कविता लिखना पालतू जानवरों के बारे में
- संयुक्ताक्षर शब्दों का संग्रहकर, तालिका बनाके पहेली बनाना (Riddles)
- सही वर्तनी वाले शब्दों पर गोला लगाएँ
- ग्यनात्मक कहानी पढ़कर संक्षिप्त करके लिखना
- इमला लेखन
- वाक्यों का संशोधन करके लिखना

### Activities in Sanskrit

Reading, writing and memorizing of simple sentences on

- Mayuraha (मयूरः)
- Marjaraha (मार्जारः)
- Kopotah (कपोतः)

- Kukkurah (कुक्कुरः)
- Kachhapah (कच्छपः)

### Mathematics

- Making a quiz based on pets for their friends
- Preparing word sums by using letters of different pet names
- Practising addition and subtraction with reference to body parts of pets
- Calculating quickly through mathematical sums
- Memorizing multiplication tables up to 9

### Resources

- Informative books and story books from the library
- Reading cards, informative texts, short stories, poems, shlokas
- Internet websites with information relevant to the 7+ age group

### Arts and crafts

- Making illustrations for stories
- Designing a scrapbook or picture cards
- Illustrating project books
- Crafting posters related to stories and for the project
- Making models of pets and their homes



### Children's reflection

One day I was looking at my pet fish that was in an aquarium in my house. Then my father came and said, "Get some food for the fish." I went to my room and brought some fish food for the fish. I gave him food and I took care of the fish every day. Then I wonder how do they understand my feelings? Then fish looked at me with some bubbles he told me, there are many things we can say without using our mouth. Like you felt I am hungry, but I did not tell you. - A

Pets are special to me because, pets are loving. I went to Jaanaki's house and

there I saw her pet turtle. It was very cute. Yet I got scared of it. Every day when I go to school, I see some kittens and puppies, and I like to see them around me. They have always time for me. Pets don't say no to play with me. - R

If I want a pet what pet will I want and why? If I want a pet, she will be a puppy because puppies do not scratch us and it is a bit easy to feed them. They love their master that is why they lick us. They have a big heart for their masters. I will choose a German Shepard also because a German Shepard is brave, active and fearless. - J

## Self-reflection by the children

### Evaluation of responses to reflective questions

#### 1. Why did we choose this project?

The children chose this project because they like pets and wanted to learn more about them. They found pets to be good friends. Pets are cute and cuddly. Pets, especially dogs, protect them as they are good at sniffing and rescuing. Some children suggested that they would like to have a pet since their friends or neighbours had pets, and that this project would teach them how to take care of the pets.

#### 2. Why are pets special to me?

Most students found pets to be cute, soft, fluffy, cuddly and loving. They would play with them when they are bored. Pets are special as they are helpful at times. One child suggested that a pet can be his brother.

#### 3. How do pets help us?

Most students felt that pets protect them

and guard their houses, give them company, make them happy and responsible, play with them when they are bored, and also scare pests away.

#### 4. What do you want to learn from this project?

Most students wanted to know what pets ate, where they lived, what their babies were called, and how to deal with them. Some wanted to know the breeds of dogs, their body parts, and how dogs sniffed out robbers.

#### 5. What pet do I want and why?

Most students wanted a dog or a cat as a pet because they are soft, cute, fluffy and helpful. Some wanted a dog as dogs are fearless, obedient, loyal and helpful. One student wanted a dog as it would protect his grandmother and sister.

### Success stories with activities

- Reading cards helped children to read, understand and recall.
- Memorizing poems exposed the children to new words and honed their ability to recall.
- Illustrations and model-making activities helped improve their hand-eye coordination.
- Context-based questions helped children improve their writing skills.
- Regular discussions, reading aloud, and experience sharing helped improve speaking skills and boosted confidence.
- They were ready to read and understand challenging texts. They enjoyed listening to, memorizing and reciting poems. With great enthusiasm, they gathered information on dogs and

cats. They did not hesitate to seek help when they came across new and difficult words. They also sought help from their friends and this too facilitated their learning.

### Challenges faced, Diyas' intervention and children's response

- Children came across new words while reading. They sought the Diyas' help to understand their meanings and learn how to pronounce them.
- Children need to improve their illustration skills by practising strokes and visualizing colours.
- Greater attention need to be paid to memorization and recitation of poems.
- Children were receptive to the inputs given by Diyas. They showed interest in correcting their mistakes.



## Evaluation of the project plans by Diyas

Children thoroughly enjoyed doing this project. All the children improved their reading abilities. They could read and comprehend short stories, poems and informative texts independently. They could retain and recall information with ease. All the children also improved their writing skills. They could compose descriptive paragraphs, with some help from diyas. However, the descriptive write-ups were simple, with basic usage of adjectives and imagery. More practice is required in this area. They have understood that they need to relate their sentences to a topic and write them in a sequential manner. They could articulate their thoughts with help from Diyas. With more exposure and practice, they can further improve.

The children could independently access informative texts on various pets. Children then wrote a factual paragraph for the first time. The information they incorporated was limited and simplistic. More practice is needed in this area.

To enhance their creativity, the children were asked to write poems and short stories. Their poems were short and simple, with rhyming words. Reading poems written by other children and adults will help them create more skilled poetry.

Children are adept at answering context-based questions.

Most children were able to complete given tasks on time. Three children needed more time to complete the tasks. One was reluctant to write in detail.

Children's handwriting and written presentation skills have improved, though the former could do with some betterment. They are conscious about submitting neatly written work.

Children attempted a reflective questionnaire related to their relationship with pets and why pets are special to them. We observed that it was difficult for the children to think independently and articulate their thoughts in English. Therefore, we undertook this activity twice so that they could express their thoughts well and write with clarity.

Planning their individual project-based booklets was challenging for all the children yet this task filled them with enthusiasm. They needed help from Diyas in planning and executing the plan for their books. We observed that some children could make independent decisions but a few followed the others, without taking their own initiative. They needed guidance to complete their books.

## Significance of Kartik month in the Indian (Hindu) calendar

### **The beginning**

*From a young age, children are aware of the English calendar with its days, weeks, months and seasons. We felt the need for children to be aware of the significance of the Indian calendar as well, with its unique days, months and seasons. Through discussions with the children, when we concluded that the children were not conversant with the Indian calendar, we decided to work on it. We also hoped to familiarize and educate the children about the various festivals that fall in the month of Kartik.*

*The aim of the project was to help children understand the significance of the Indian calendar, which is closely associated with the culture of India.*

How did the children become independent?

Children were aware of the names of days, months and seasons in English. However, they only knew the names of days in Hindi. When the Indian calendar was introduced, children showed keen interest in knowing the Hindi names of months and seasons. This interest and their inborn curiosity helped them gain serious and valuable knowledge.

Importance was given to enhance reading single reading materials, comprehension and verbal presentation skills and creative abilities. Discussions helped them assimilate information, which helped bring clarity in their understanding and verbal expression.

#### Group needs

- Language development
- Development of Verbal Presentation skills: expression and dialogue delivery
- Ability to retain and recall information
- Memorization and recitation of poems.
- Logical thinking and quick mental calculation abilities

- Questioning and reasoning abilities
- Drawing patterns and use of colours
- Collaboration: the ability to work with a partner and in a group

#### How these were covered

- Exposure to good language
- Presentation of learning to different groups
- Activities to develop drawing patterns and use of colour combinations
- Encouragement to read, assimilate and share information
- Memorization of poems
- Activities to create curiosity, logical understanding of facts, and raising of critical questions
- Opportunities to work effectively with diverse teams, and sharing responsibility

#### Group Environment

- Reading cards: informative texts, poems and drawings of patterns were made available
- Display of write-ups, drawings and poems by children



- Games and puzzles for children to play with
- Handy worksheets to reinforce concepts

### Aims

- Language development
- Development of interest in our shared culture
- Understanding and appreciation of the Indian calendar
- Awareness of the relationship between planets, days and months
- Significance of festivals that fall in the month of Kartik
- Development of verbal presentation skills
- Enhancement of quick mental calculation ability
- Sharpening of logical reasoning abilities

### Objectives

- Development of reading, comprehension and presentation skills
- Reading with clarity and understanding
- Enhancement of information retention and recall
- Development of verbal expression
- Recitation of poems with clarity and confidence
- Identification of days, weeks, months and seasons of the Hindu calendar, verbally and in writing in Hindi; comparison between Hindu and Gregorian calendars
- Understanding of the concepts of paksha, prahar, muhurat
- Development of independent writing skills with emphasis on
  - Factual writing
  - Creative writing



### - Answering skills

- Verbal and written presentation of work
- Completion of work on time
- Legible handwriting and neat written presentation
- Mental mathematics: quick calculations in addition and subtraction
- Sharpening of logical thinking and understanding of facts
- Ability to draw shapes, patterns and rangoli designs
- Ability to use colours aesthetically

### Objectives for physical development

- Development of fine motor skills
- Organizational skills
- Importance of time management
- Making a calendar
- Chart preparation
- Putting pulli kolams (from South India)
- Making rangoli with colours from natural resources
- Construction of a Kartik boat
- Practising dance movements



## Activities

- Drawing shapes, patterns and rangolis
- Making charts for their presentations
- Learning and practising some dance steps
- Arranging materials for their presentation
- Emphasis on neatness and legible handwriting
- Completion of work on time
- Utilizing time effectively

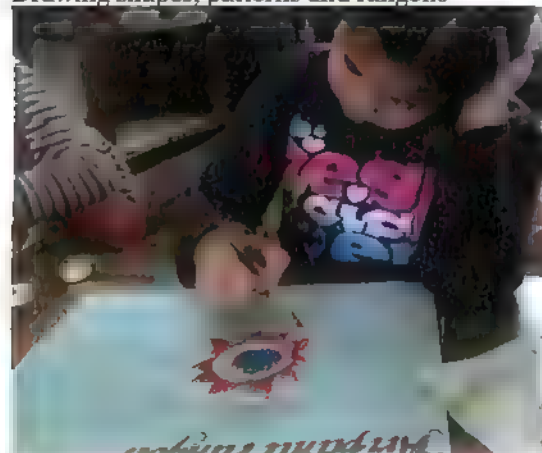
## Objectives for vital development

- Developing sensitivity towards the Hindi language
- Developing presentation skills
- Developing clarity and confidence in verbal expression
- Nurturing love and appreciation for poetry
- Achieving fluency in written and verbal expression (in both languages)
- Reflecting on one's work

## Activities

- Gained information about the Indian calendar through reading and listening
- Presentation of one's work, verbal and written
- Participating in discussions
- Reading and appreciating poems

## Drawing shapes, patterns and rangolis



## Objectives for mental development

- Expressing ideas, views, opinions with Diyas and friends
- Retaining and recalling of information
- Developing reading, writing, and comprehension skills
- Enhancing creative thinking abilities
- Developing thinking skills
- Stimulating analysing and critical thinking abilities
- Developing verbal presentation skills
- Understanding written instructions in worksheets

## Activities

- Making of a calendar
- Creating songs for their presentations
- Group discussions of the topic
- Reading cards
- Memorising songs
- Understanding rangoli patterns
- Planning and making sequence for their presentation

## Objectives for psychic development

- Learning with joy
- Developing sensitivity towards languages
- Reflective questionnaire



## Activities (English)

- Reading cards on
  - \* The Indian and English calendars..
  - \* Significance of the Kartik month
  - \* Festivals occurring in the month of Kartik
  - \* Types of rangolis, forms and materials
  - \* Why is a rangoli drawn at doorsteps?
  - \* What do rangoli patterns symbolize?
  - \* Reading stories based on festivals
- Discussions on various topics related to the project
- Making an Indian calendar
- Reading and memorizing songs
- Addition and subtraction using days, months and fortnights for reference
- Drawing rangoli patterns on chart paper

- Decorating rangoli patterns outside various groups
- Improvement of spellings
- Verbal and written presentation
- Worksheet to strengthen children's understanding

Criteria for selecting poems and songs as study materials

- Good language appealing to children
- Age appropriate
- Simple ideas expressed in simple language
- Easy readability and comprehension
- Bring a sense of love for Indian culture

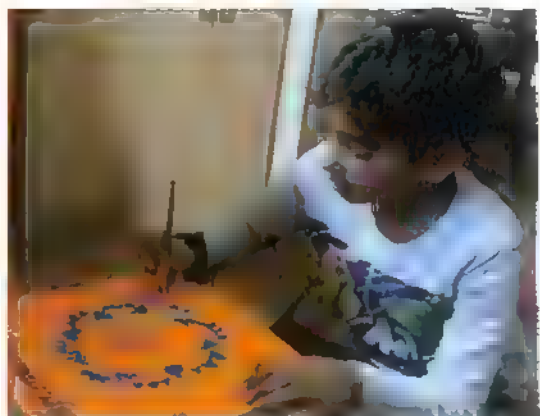
Stories: Embedding elements of Indian Culture

- Month full of dance
- Story of Kartik Purnima
- Ghee and lamps
- Light
- Story of boats in eastern India
- Story of Raktabeeja

Informative texts

- Information on Hindu and Gregorian calendars
- Significance of Kartik month
- Festivals in Kartik month

Information on Hindu and Gregorian calendars





Why is a rangoli drawn at doorsteps?

- Rangoli forms, patterns, materials
- Reading and appreciation
- Let's dance on dew drops
- Winter begins, let's clap
- Cosy bed
- I love the sun rays when they fall on the grass

#### Memorizing Poems

- शरद पूर्णिमा से होता शुभ आरम्भ
- प्रथम महीना चैत मे गिन
- ऋतुएं आती जाती हैं
- समय चक्र
- एक पलक झपकाओगे तो

#### Activities (Hindi)

- कार्तिक महीने की विशेषताओं के बारे में नयी कहानियां पढ़ना
- कार्तिक महीने की विशेषताओं के बारे में नये अनुच्छेद पढ़ना और लिखना
- हिन्दी में वाग्व महीनों को पढ़ना, याद करना, लिखना आदि

- ऋतुओं की विशेषताओं के बारे में जानकारी प्राप्त करना
  - वर्णों के द्वारा गचनात्मक लेख
  - पक्ष, पल, निमिश, प्रहर, घड़ी, काल, मुहूर्त, आदि नये शब्दों को जानना और समझना
  - अनुच्छेद लिखना
  - लिखी हुई कविता पढ़ना और उसका सस्वर पाठ करना
- कार्यपत्रक (worksheet) को समझ कर करना

#### Activities (Sanskrit)

- संस्कृत भाषा में गल्प को सुनकर समझना
- ऋतु और माह की विशेषता में नये गीत सीखना
- ऋतु वर्णन
- ऋतु सम्बोधन
- द्वादश माह
- पथमी, द्वितीय, तृतीय, चतुर्थी, द्वादश तक पढ़ना और लिखना

#### Mathematics

- Calendar making
- Understanding the concepts of pal, nimish, kashta, kal, ghadi, muhurat, din, hafta, pakshya, maas, varsha
- Calculation using the two operators, addition and subtraction

#### Art and craft

- Learning about different kinds of rangolis from different parts of India
- Pulli kolam from Tamil Nadu
- Rangaavaali from Karnataka
- Poovidal or pookalam from Kerala
- Muggulu from Andhra Pradesh
- Alpana from West Bengal
- Aripana from Bihar
- Chowkpurana from Uttar Pradesh

#### Reading resources

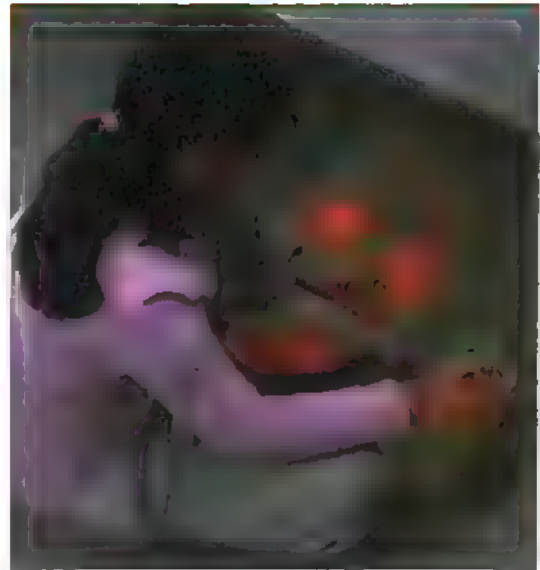
- Informative books and storybooks from the library

- Reading cards (informative texts, short stories, poems, shlokas)
- Internet websites with information relevant to age group 7+

### Evaluation of the project plans by Diyas

The project began with a group discussion, aiming to assess the children's understanding and the importance of months, days, weeks, weekdays, weekends, fortnights and year. When the children shared their thoughts and views, they were clear about the English calendar timelines. However, they were at a loss when asked about the Hindi equivalents. Therefore, we introduced the names of months through a song, as follows: प्रथम महीना चैत से गिन

गम जन्म का जिस में दिन  
द्वितीय माह आया वैशाख  
वैशाखी पंचनद की माख



A written activity on the English calendar helped bring clarity to the minds of children. Most were clear about the names of days, weekdays, weekends,

### Rangoli making







Concentrating on creating a perfect design

months and seasons. They also knew the number of days in different months. They also understood that, according to the Indian calendar, dawn marks the beginning of a new day and the passage of time is counted via fifteen muhurats, each muhurat comprising forty-eight minutes. Children showed keen interest in these concepts.

Our focus shifted to names of months in the Indian calendar. It was quite a challenge for the children to learn and memorize the names of months in Hindi. Nevertheless, all the children were able to do so. We moved on to learn about the significance of Kartik. During these activities, we focused on listening and understanding skills. We paid attention to children's listening abilities and encouraged them to listen carefully. We observed that though this activity was challenging for all the children, they thoroughly enjoyed it.

The next activity was festivals in the month of Kartik. As some of the festivals are celebrated in school and at home, most children were able to share relevant inputs on festivals such as Diwali, Chhat Puja, Bhai Dhooj and Dhanteras.

Children were encouraged to read about the different forms of rangolis and their significance. Children read cards with information on rangoli, its forms, materials used and the states associated with them. All the children took interest in the eight rangoli forms. They could read the materials, comprehend the information and articulate their understanding in their own words. Each child chose a state and the rangoli form associated with it. They drew patterns and designs on chart papers and in the corridor. They understood the forms of rangolis and applied it in their drawings.

To enhance their verbal expressions, children prepared presentations. They

took keen interest in memorizing their narratives and poems. Though it did take a lot of time and effort, they put up excellent presentations. They were clear

## How did I prepare myself for this project?

We read extensively on the topic. All the reading materials prepared were vetted so that the children could read, understand and recall with ease. Songs and poems chosen were not only pleasing to the ears but also educational. Some poems were written in Hindi, keeping in mind the children's vocabulary. These were informative, educational, and rich in language use. Stories and information were age-appropriate. Worksheets were prepared and remedial work done to iron out issues in language and mathematics.

in their understanding, assured in reciting the lines and poems, and confident in sharing information. Overall, all the children showed good progress. Children enjoyed the project thoroughly. All the children have improved their presentation skills. They were able to read and comprehend the informative texts with help from the Diyas.

Through this project, children understood the mathematical concepts of pal, nimish, kashta, kal, ghadi, muhurat, din, hafta, pakshya, maas and varsha etc. and could relate these concepts in their day-to-day lives to a certain extent.

Calendar making was a learning experience for all the students. It helped reinforce the concepts. Each child took keen interest in preparing a calendar. Mathematical operations of addition and

subtraction, with extended numbers till 365 days was called out. Most students are clear with these operators but a few need regular practice.

Through this project, children were able to appreciate the Indian calendar. They showed keen interest in learning names of the days and months in Hindi. They could hold constructive discussions with their parents and grandparents on the various festivals of Kartik. Their interest in Hindi language has increased.

Memorizing lines and poems for their presentation has helped all the children improve their retaining and recalling abilities. Most children could complete given tasks on time. Three of the children needed more time to complete the tasks. They recited the poems with clarity though they took time.

Children are conscious about submitting neatly written work but handwriting and written presentation can improve further. Drawing skills have improved. Children have learnt to draw straight and curved lines, shapes, and designs. They also use colours aesthetically.

## Diyas' interventions and children's responses

Children came across new words while reading. They sought help from the Diyas to pronounce and understand their meanings. As the project subject was new, the children found it difficult to express themselves in both the languages. Therefore, the write-ups were simple with minimum detailing. To encourage them, individual attention and remedial work were taken up.

Children enjoyed drawing rangolis on chart paper and placing these outside the



*The group giving a presentation*

groups. The designs were simple yet beautiful. They were well chosen. The children were encouraged to make and use natural colours. The colours and combinations used were aesthetically pleasing and commendable though the straight and curved lines need practice.

interest in correcting their mistakes. They were ready to read and understand challenging texts and memorize lengthy songs. They enjoyed listening to, memorizing and reciting poems. They freely sought help when they came across new and difficult words.

Children were receptive to the inputs given by their Diyas. They showed

Physical education has three principal aspects:

- (1) control and discipline of the functioning of the body,
- (2) an integral, methodical and harmonious development of all the parts and movements of the body and
- (3) correction of any defects and deformities.

The Mother, CWM, Vol. 12, p. 12

# Water - the elixir of life

**Aims:** Students will be able to:

- Understand the importance of water and realize that rain is the primary source of water for all.
- Enlist tasks that cannot be done without water and those for which water is not required.
- Define a source.
- Demonstrate how water gets to their home from a natural source.
- Understand why sea water cannot be used for domestic purposes and identify the various freshwater sources.
- Use their sense of smell, taste, sight and touch to describe water.
- Conduct experiments to understand the properties of water.
- Guess the capacity of a container and will also be able to find out the capacity of containers using measuring cylinders.
- Predict the outcome of given tasks from prior experience.
- Understand that evaporation is a process that goes on continuously in nature, heat and wind make water evaporate faster.

## The beginning

The story 'Bringing Rains to Kapiti Plains' is narrated in the class. The story is an old African Folk-lore about a herdsman named Ki-pat. He needs rain for the grass to grow so that his cows do not die. Ki-pat makes a bow and an arrow and shoots the arrow into the black rain cloud. The arrow helps to change the weather so that grass can grow and cows can live.

Learners listen to the story with rapt attention.

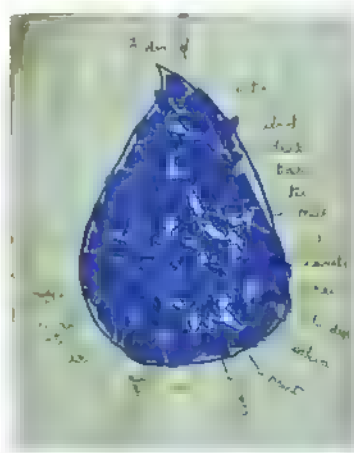
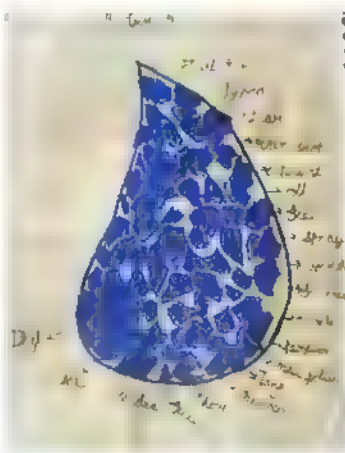
Thereafter they are asked to share their thoughts on clouds and how they bring rain. It is interesting to note that a number of them think that clouds are made up of cotton. Himesh, studying in class III E stands up to share that clouds have a lot of dust particles, others are convinced that clouds have a lot of water in them.

Learners are curious and want to know more, when the teacher shares that they could make their own cloud, in a jar when they learn what goes into making a cloud.

Rain in the Kapiti plain fell in drops, and our next activity is all about a drop.....

Learners are asked to draw a large rain drop and cover the drop with pieces of blue origami paper. They are asked to think of as many associations beginning with 'a drop of....' And write them down around the drop.

*A drop of ....*







information about the substance using their 'special' sense of sight, smell, taste and touch. A boy from class III A stands up and says that the message he has to share is that the content in the cup is sticky as drops of it stick to his fingers when he touches it.

Some others share that the substance has no taste, is cold and is shiny. As aliens, they find it amazing that their fingers go right into the substance.

The students are then divided into groups of six and the groups are sent to the water investigation stations set up for them, to find out certain other facts about water.

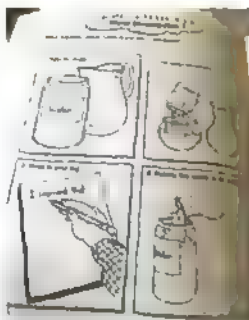
They are to read the instructions pasted on the wall and complete the procedure (materials for each of the investigations having been placed at the stations before the learners assemble).

Students are extremely excited about the investigations. Each group is asked to read the instructions carefully before they carry out the procedure. For the benefit of the learners, the instruction sheets had been taped on the wall.

They are to handle glassware and therefore the teacher asks them to exercise caution.

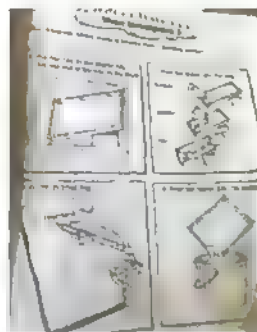
### Investigation 1

Learners are instructed to pour out a certain volume of water into containers of different shape and through the observations made they discover that water takes the shape of the container in which it is poured. The conclusion drawn is that water has no shape of its own.



### Investigation 2

They relate this activity to water flowing downhill. The learners mention that the water flows at great speed first and then slows down as the slope (gradient) decreases.



### Investigation 3

Many students were quick to observe that in this experiment the water level comes up as coins are dropped, just like the water comes up when pebbles are dropped into the pitcher in the story of the thirsty crow.



The coins are heavy so when dropped into the water, they push the water up is how some of the learners explain the phenomenon.

Ritesh of class III C explains that some of the space is taken up by the coins forcing the water to take more space. Spendid!!!

### How much water can I hold?

The teacher relates a story thus; Shivam and Ashna were feeling thirsty. Their aunt gave both of them a glass of juice each. Ashna wanted to drink from a glass tumbler instead of the steel tumbler in which the juice was served to her. Her aunt poured the juice from the steel tumbler to a glass tumbler. But Ashna is not happy. She insisted that her aunt has given her less as compared to her brother. What does the aunt do to convince her that she has been fair and served the same quantity of juice to both of them?

The teacher pours a certain volume of water into two tumblers of the same kind and then pours the water from one of the tumblers into a taller tumbler and then asks the learners if the water is indeed less?

### How do we find out?

She explains that in order to find out, we need to measure the liquid and for that we need to know the capacity of the container holding the liquid. Capacity is the total space of the container. The space that is available for storing a liquid.

The teacher assists the learners to measure the capacity of a glass beaker with markings on it. Thereafter she helps the learners understand how the capacity of four such beakers measuring 250ml each, make 1000 ml that is 1 Litre of water.

In a game that follows the teacher displays containers of various shapes and capacity used at home and asks the learners to guess the capacity of each one at a time.

After they guess the capacity, the teacher actually measures the capacity of each container one by one by pouring a fixed volume of water into the containers till each one is filled.

Excitement fills the classroom as the learners attempt to guess the capacity of each container held up by the teacher. I guessed it right! Yes!!!!

### Where did the water disappear?

Activities done on evaporation required the learners to predict the outcome. The class was divided into three groups and each group was given a situation in which the water disappears.

**First Group:** Learners fill a petri-dish with water and leave it on the window sill for a day.

**Second Group:** Learners are asked to take two cloth pieces wet, and wring both and hang one of the cloth pieces outside in the sun and the other inside the classroom.

**Third Group:** Learners are asked to wet their hands and then shake their hands vigorously for a minute or two.

Learners are asked to predict the outcome in each case.

The predictions made by the first group: There would be no water left in the Petri-dish if it is left open on the window sill. Birds and squirrels would drink the water.

The water in the Petri-dish will become dirty.

The Petri-dish would be dry.

Predictions made by the members of the second group:

The pieces of cloth will become dry.

There will be less moisture in the cloth pieces after sometime.

The predictions made by the third group of learners:

Hands will remain wet.

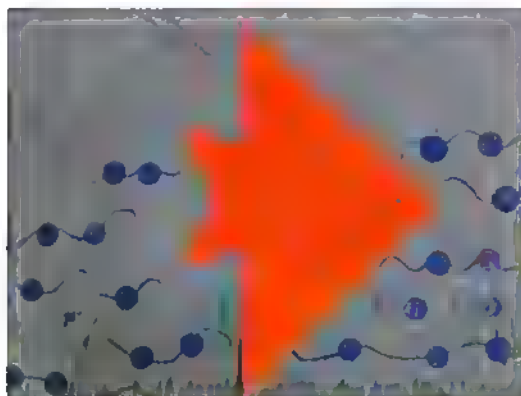
The hands would absorb the water.

Water would fall on the ground because of all the shaking.

After the activity, the teacher explained the concept of evaporation, a phenomenon that goes on in nature at all times- water changing from its liquid state to its gaseous state, that is water vapour.

Thus our project on water drew to a close and as a concluding activity we did art work using water colours and folded an origami fish.

## A Posy of Poems



### How Much Water Do You Use?

Count the number of times you use water in the second column. Put a tick mark in the third column for each activity. Add up the total number of times you use water in the third column.

COLUMN 1 Activity	COLUMN 2 Number of Times over 3 Days (✓)	COLUMN 3 Amount of Water (Litres) used each time in activity is done	COLUMN 4 Total Amount of Water Used (Litres)
Brushing teeth	///	4 litres	12
Using a shower		10 litres for 5 minutes	
Using a bath		15 litres (one bath)	24
Using a toilet	///	9 litres full flush	27
Using teeth for earrings		6 litres for one minute	18
Using tooth brush & mouth wash		2 litres	6
Washing clothes		5 litres	15
			102



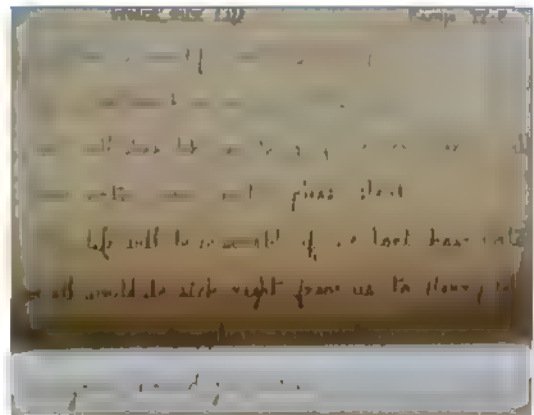
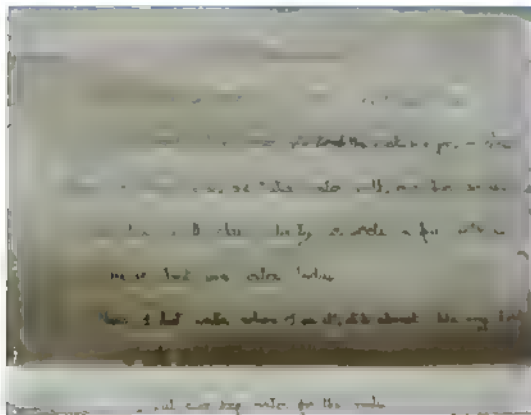
the water which was falling said what  
the water which was falling said what

the rusty old tap.  
Pant, Pant, Pant Pant, I tightened the tight  
off tap.  
The strange liquid which is of dark blue  
washed to mine in my house  
It comes in use but every one, from  
a man to a teeny little mouse

Water Water  
water is the most precious  
and the most common  
water is the most precious  
because of water we can  
live in water we drink

Water is the most precious  
of life on earth,  
rivers, lakes and  
sea, ponds, streams  
and waterfalls are  
all filled with water  
without water, would  
there be life on





This vital education has two principal aspects,  
 very different in their aims and methods, but both  
 equally important. The first concerns the development  
 and use of the sense organs.  
 The second the progressing awareness and  
 control of the character,  
 culminating in its transformation.

The Mother, CWM, Vol. 12, p. 20

# Measurement

## The beginning

*The children of Joyful group have been together for six years. We have worked with them for six months and observed that they were deeply engaged when they were working with their hands, for example on making flowers with paper. They could be doing this for a long time. We had tried individual projects with them but felt that they were seeking companionship and were not really ready to pursue an enquiry of their own for a sustained period. At this level, we usually concentrate on working on their language skills because once language is strong, children are usually on the path to self-learning - both comprehending and expressing themselves. This is also the level where written mathematics foundations in the four basic operations and their applications has to be made strong.*

*The children also did not have deep relationships with one another. Their abilities and awareness also had a huge variation. Any decision that had to be made in the group as a collective was very difficult because each child had a strong opinion and was sure that she/he was correct. So we needed a project that would be exciting and engaging for all children and yet we could meet all the goals we had set for the group. One of the senior Diyas had an experience of doing this project before and so we chose this project.*

**Aims****Objectives for physical development**

- To grow in awareness about their bodies and their abilities like speed of running, stamina and focus while trying to balance a disk on a stick, or walking on stilts.
- To be able to organise material.
- To improve fine motor skills and accuracy.
- To observe the physical surroundings and things around and estimate.
- To observe how things have been made in nature or in the surroundings.

**Objectives for vital development**

- To observe and appreciate how carefully and with what effort things that they use have been made and care for them.
- To build a relationship with different spaces that they use.
- To become aware of inter-personal relations among friends.
- To understand that different people have abilities and to be able to leverage on that.
- To learn to work in a team joyfully and resolve differences calmly.

**Objectives for mental development**

- To work on English language skills.
- To strengthen their Mathematics skills and enable them to apply these in different real life situations.
- To work on their problem solving abilities.
- To get them to begin thinking logically – for example how they had arrived at different ways of measuring, with their knowledge of length, breadth and thickness, to think about how to measure a circular object.

- To create their own measuring equipment.
- To design something new in their own space using concepts of measurement.

**Objectives for psychic development**

To get them to observe and become aware of their own feelings and reactions.

**Introduction of the project**

Like we mentioned earlier, the group Diyas decided that the 'measurement' project would be suitable. The first task was to introduce measurement to the children and also understand how much they knew. So we began by having a group discussion by asking "What is measuring? What can you measure?"

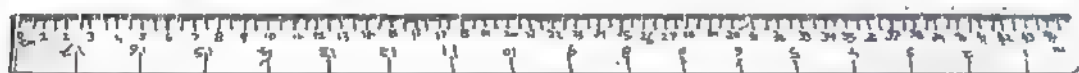
A few of them knew the vocabulary. They came up with length, breadth, height and distance. We listed these words on the board as they shared, so that all the children got to know these words with spellings. Next we asked them how to measure these and many answered "scale" or "tape." One child said centimetres or meters. Then we prompted them to think what else could be measured. After some pause one child said "weight". Then we asked if can one measure weight with the scale or tape. After a pause, a child answered, "No it is in kilograms." We again persistently asked "What else can you measure?" One child came up with volume, pressure and temperature. Then to check the understanding and to get them to think, we asked a little jokingly if 'volume' meant how loudly they talked. Another child then said making gestures with a hand to indicate a bottle shape, "Milk comes in litres. That is how much milk is there..." (She was pointing to the bottle).

**Evaluation:** The idea of measuring was familiar to them. Some were talking

about what to measure and units of measurement. They had begun thinking. So the next step was to do something to check each child's understanding and clear their concepts.

In this group, home work tends to evolve and we gave the children home work based on the work that they did in the day. The idea is to expand the idea further and allow time discussing it with family and observing their surroundings at home.

As the children were introduced to the topic of measurement, we gave 30 cms strips of strong paper to the children to take home and make a scale. One child said he would make a 40 meter scale to which another responded, "Do you even have an idea of how long a forty meter scale can be?" and started showing him the distance with his hands.



### Activities

Through this practical work we noticed that they had not noticed the words centimetres and inches. They had not made exact markings. Two children had made what looked like inches, two had made markings that were their own estimates. Some made what looked like centimetres on both sides and some could not attempt at all.

**Activity 1** — Each child will make an accurate 30cm scale

#### Aim

- For the children to experience the units of measurement and have these etched in their memory.
- To develop focus, increase concentration span, sensitise them to

precision and develop grit.

### Process

We cut thick photographic paper into strips of 50 cm and gave it to each child. Then we also gave a wooden scale to each and asked them to observe the markings. This was followed by a discussion on what they had observed and what markings they had seen on the scale.

The questions we asked were:

1. What different types of markings do you see on the scale?
2. How many long and small lines do you observe?
3. What patterns do you observe?
4. How many small lines are made between two longer lines?
5. How many numbers do you read on the scale?
6. What do 'c' and 'm' mean?

Through this discussion, the terms 'centimetre' and 'millimetre' were introduced. To show them how it is done, the Diya began making her model scale by marking the dots for centimetres, and then drew the lines for them. After observing the Diya, the children also started marking their scales.

**Evaluation:** The children began this activity with great joy and eagerness. Few children carefully observed didi making her scale and followed the same process independently. Few others needed guidance to start off while two of them needed continuous support throughout. Even though they were doing it joyfully, they could not draw straight lines for markings. It took more than three hours but the children were motivated enough to do it.



The children were heard sharing among themselves that how missing even one small line alters the measurement of the object. There were discussions on whether the scale started with a zero or one. Some children wanted to know whether to start at the edge or leave some space. Some had started with zero on the same side for both inches and centimetres. In some cases the markings were done with a thick pencil and the markings themselves were a millimetre each. Most children had to make a second scale. So the children had spent another three hours to complete this activity.

At the end of the activity, most of the children were proud of owning their scale. We accidentally found that this scale could be wrapped around and used as a tape also. This evaluation included both observation and then practical work.

**Activity 2** — Measuring things in the classroom using the scale that they had made.

To begin this activity we measured the length, breadth, height and thickness of one desk. Then we asked the children to measure whatever they could see in the classroom and record it in their notebooks. Some measured a book, water bottles, their bags, boxes. One child who is mathematically inclined wanted to measure the length and breadth of the classroom. But he was confused about how to measure the length because there was an irregular cupboard along the wall. He was perplexed till he was prompted about the floor. It suddenly occurred to him that he could also measure the length along the floor. When the children saw him measuring along the floor, rotating the scale and picking up where he left the previous time, they also wanted to measure larger objects like the window and black board. This meant that they

had to add in 30's and the remaining number to that to get the length.

Since this was successful and the children were engaged, we decided to take them outdoors and asked them to measure whatever they could see. Some measured leaves, twigs, benches, feather, teacher's shoes and dust bin. When they were measuring irregular objects there was a discussion on what was length and breadth.

We kept expanding the scope based on what each child came up with and understood. For example, one child wanted to measure something big. So we asked him to measure the height of the gate. But the gate was tall and so he did not know what to do at first. Then he noticed that there was a pattern that was repeating. So he measured the height of the pattern and added it up that many times. Then another child wanted to measure the basketball court but did not want to use the scale that many times. So we asked him to think of a solution. He teamed up with another child and they measured the length in number of strides. They then measured their stride with a scale. Looking at them, another child wanted to measure the distance of the path with his strides. A second child then measured the same distance and said that was wrong. A discussion on how everybody's stride was different followed.

**Evaluation:** Through observation and interaction we found that some children were actually not able to measure when it was in fractions of centimetres. For example, one child measured the dustbin and with help she understood that it was 33 centimeters and 4 millimeters or 33.4 centimeters (They don't really understand decimals but it is more like 4 small lines between a centimetre).

**Homework:** We gave them the task to take the scale home and measure objects at home. They came back and reported that they had measured things like butter packet, channa masala packet, charger wire, lego box, air purifier, microwaves, pillows and a guinea pig. They had also recorded these in their note books.

### **Activity 3** — Reading material on the history of measurement

*The story of measurement: a first adventure with mathematics.*

**Evaluation:** The idea was to build their reading and comprehension skills and vocabulary through this. In addition, we also wanted to introduce the idea of history and the need for a standard unit of measurement.

Due to varied abilities, we did not have a group discussion to take this forward. Some children read it very fast. With some, we had to work individually and help read line by line.

### **Activity 4** — Make their own weighing scales.

In the class, children were shown small brass weighing scales, a kitchen scale and a scientific scale from the laboratory. We also showed weights from milligrams to large iron kilo weights. We then measured some of their belongings like eraser, pencil, pencil box, water bottle, bag and hair pin. Each child was to estimate the weight of their object and then place the object on the weighing scale. This became a guessing game and was fun.

At the end of the day we asked the children to make their weighing scales with material that was available at home.

**Evaluation:** Through practical work and observation.



They brought back their weighing scales the next morning. One girl had small steel plates. It was well calibrated and had made holes in the plate. Diverse materials were used for the scales, rope and balancing beam. One for example, used a hanger as a balancing beam. The scales were made of take away boxes and ice cream cups. Many also brought small toys, lego blocks and batteries to use as weights.

### **Activity 4a** — Using their weighing scales weigh two different materials in the surroundings outdoors.

The children were to work individually and pick up any material in the playground and weight it against another. They would then be able to observe how a scale works and also estimate what is heavier and what is lighter.

**Evaluation:** Through observation of practical work and conversation with children.

Children were resourceful and used many objects, for example fresh leaves and dried leaves, two stones, wet sand versus dry sand and feathers.

We noticed one child saying dry sand was heavier than wet sand. We then engaged the child through a conversation and asked how he came to that conclusion. He had been doing that because another child was doing it. That child caught on and said one fist of wet sand as against one fist of dry sand. Here we noticed that this child had understood volume and she was trying to measure equal volumes of wet and dry sand. Then we noticed that others gravitated towards this conversation and quickly grasped what she was trying to explain. In fact one child demonstrated that a large heap of dry sand would be heavier than a little wet sand.

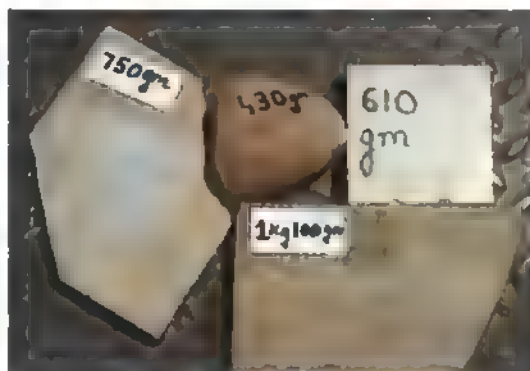
## Activity 4b — Measuring their own height and weight using a weighing scale

Since we had measured length and weight of objects around, we thought it was logical to measure the children's height and weight. There was a marked height scale on the wall. So children measured each other's height and weight and recorded the movements in their notebooks.

**Evaluation:** When children were measuring each other's height, they were calling out numbers like 122 and 130. We asked them 122 what? donkeys, eggs or kgs? Few were not able to answer. Some said height. So we realised that they were confusing the parameter they were measuring and units. We made them sit in a line and showed them a scale, clarified that by showing what length was and how we measured that using a scale in centimetres.

**Activity 5 — Making own weights**  
Just like the children had their own scale, we wanted them to have a set of their own weights. So we asked them to collect stones or objects of different weights, weigh them on a weighing scale and write the weight on them. The children then used these weights to weigh using the weighing scales that they had made.

**Evaluation:** By observation of practical work. This was really a fun activity. Some children randomly brought some large



stones. But a few meticulously observed the different weights and tried to go out repeatedly after weighing to collect stones close to the weights that were available. Some even brought small light weight lego blocks and things from home so that they could have five gram, two gram, one gram and smaller weights.

**Activity 6 — Introduction to coins.**  
Money was one of the topics that we had decided to take as part of this project. The school had a collection of old coins of





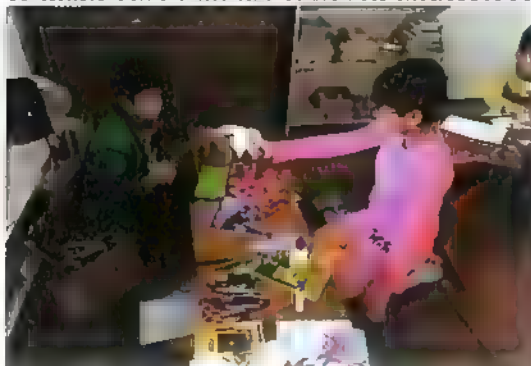
many denominations. So we brought the box of coins. The number of coins labelled on the boxes and what were inside did not match. So we wanted the children to familiarise themselves with the coins. .. We gave each child a box of different denominations, some worked with partners and some in a group.

**Evaluation:** Some children were observant and sorted and organised the coins carefully for example in stacks of ten, counted and put them in their respective boxes and labelled them. One child looked only at the number and mixed up five rupee and five paise coins. We spent the whole morning organising the coins and labelling the boxes. The children were fascinated with the coins and worked well.

### Activity 6a — Setting up a shop

To take the money topic further but in a way that the children would be engaged, we decided to set up a shop in the group. We asked the children to make as many things as they could at home and bring the next day. We were going to set up a shop in the group.

Before actually setting up a shop we had to make sure that the children understood



how many paise made up a rupee and how they would tender change in the given denominations.

So we asked some questions in the discussion circle.

1. If one origami paper costs five paise (this was decided by one child who made objects using origami), how much would it cost for four papers?
2. You had one rupee with you to give the shopkeeper, how much change would you get back?
3. Shopkeeper had only 20 paise coins with him, how many coins would he have to return?

Some children were taking time to answer these questions. We took them aside and explained and gave them actual coins and asked them to give change. When they had to do it practically, they were able to understand.

Since some of them were able to understand and use their knowledge using the paper money, we moved to setting up of the shops.

We paired the children and each pair could set up their shop in their class. They could also price their objects with an amount that they wanted. We got the children to set up their ware attractively with signages and price tags. One child had not made anything and so we asked him to become an artist who would make people's portraits. We made paper money of different denominations and gave it to the shops.

From each pair, one child would be the shopkeeper and the other would be the shopper in the first round. In the next round, they would swap.

We asked the shoppers to come to the centre and we gave each shopper Rs 100. He could go around to any shop and buy as much as he could with Rs 100. The shop keeper would have to give the ware and tender change. One teacher was the



bank and since we could not predict how much change they would need in addition to what we had already given them, the bank would make and give them denominations and the amount they asked for in return for any money they gave. The other teacher was observing the interactions. They had trouble understanding at first. For example one child came to the bank with a Rs 50 for change. He wanted change and when asked how much change, he said, "I sold my object for one rupee so you give me Rs 49". The Diya asked him, "Can the bank keep your one rupee that you made?" he did not understand and said, "ok".

After a while, he came back and said I have no money. The Diya explained and asked when he gave the bank Rs 50 for change, why he collected back only Rs 49. He was still not very sure in spite of taking back Rs 1 from the bank.

Three children were careful and when the bank gave them change, they would count and check.

Children were immersed in this play. Each one of them was involved visiting every shop. The portrait corner started to get popular. That child was happy making portraits and would be happy to receive whatever money they gave. He charged for his portrait according to the age of the visitor visiting his corner.

**Evaluation:** Through previous day's observation and solving Math worksheet

After we played this shopping game, we made word problems in math the next day, based on some of the transactions we had seen in the group. We typed out these problems and handed over the sheets to the children. This would address both language and math simultaneously. The

children would also connect because they had experienced many of these situations. We had to divide the class into two groups. For one group we just handed the paper and they read, taking time and working out the problems themselves. We tried getting them to write in steps. One child was very good at math because he works on it at home and we noticed that children were discussing among themselves in this group comparing their answers and solving.

The other group had a problem with the language and had to be explained to clear the confusion they had. The Diya was facilitating, reading the problem, understanding and solving in an interactive manner with the whole group. She used the paper money that was made for the shop activity to help them solve these problems.

#### **Activity 7 — Measuring the running track with a meter tape.**

By this time, the children were used to measuring with a scale. They were used to the terms centimetre, millimetre and meter. So it was time to get them to measure in meters. We cut a long satin ribbon rolled into one meter strips. We paired the children up and they had to measure the whole running track.

**Evaluation:** It was good weather and the children enjoyed being outdoors. Since the task could not be done alone, they had to work with their partner. They were in a hurry to measure and hence while turning the ribbon to measure the next tape they would have moved ahead by two or three centimetres. So they had to be guided to be precise. This exercise involved bending down and repeating over a 400 meter track.

**Activity 8** — Measuring a kilometre long path with a 80 meter rope. To also bring the concept of working in a team with discipline on a task that needs a lot of co-ordination.

An 80 metre long rope was marked at 10-meter intervals and each 10-meter was coiled in a ring. Each child was given one bundle to handle. One end of the rope was with one child and the other end with another child. The other children walked in between carrying ten-meter bundle. So everybody had to walk together in a line. One child was given a chalk and the responsibility to mark the measurement. To begin measuring, the first child had to hold the rope down, then the child with the first bundle would unwind and hold the rope down at the ten-meter mark, then the second child and so on till the whole 80 meter stretch was open. Then the marker marked 80. The first one lifted the rope and winding up began. The last person remained in the same place and now the last ring turned around and unwound first. This time the marker will add 80 to the previous mark and the child writes it down. We measured 1040 meters like this.



**Evaluation:** Some children were involved and understood that this activity needed co-operation with the others and carried on smoothly. Others got irritated when they were winding up the rope as it would tug as the person before was also winding up.

The teacher had kept the resources ready by marking and coiling the rope to teach how this task could be done in an orderly way – winding and uncoiling smoothly without any knots. However we felt that perhaps we should have given a long rope to children and asked them to find their own way of doing this and let them struggle. We could have arrived at the solution collaboratively later.

Some math was integrated here because before marking, we would have a little discussion on how much we had covered and what the new marking would be. We were revisiting the four math operations.

**Activity 9** — Measuring the play installations in the children's junior park and drawing out a replica in their drawing books and recording the measurement.

**Aim:** The aim now was to get them interested in things that they loved and observe them carefully. The idea was to make it as real life as possible where they had to discover what to measure and how. Another aim was to get them to understand written instructions and follow them and to then get familiar with the dimensions and units of measurement by recording them in their books.

**Process:** A one-page handout was given to each child. It went somewhat like this: We have to make a new playground like the junior Park. We have to measure the dimensions of all the play things in the park so that we create another one. For example, if we have to make a swing,

what all do we need to measure? Observe carefully and mention.

So what are the playthings in the park? Draw them in your book and write down the measurements.

We can measure some things with the tools that we have. For some other things we may not have the tools, so note down what is it that we have to measure?

When they read the first line, all the children were excited. "Really?" some exclaimed. They half believed it. After reading the material, one child expressed that she could understand and cannot pronounce the word dimensions. We wrote the word on the board and three other children pronounced the word.

When Didi asked another child who volunteered to explain so that his friends understood, he said that dimension meant things and table. Though he had an understanding of what dimensions meant, he could not articulate his thoughts. Then other children tried to explain their understanding until the first child understood the meaning of the word dimension.

Till now the children had only made line measurements. Not that we had to teach them to measure circular objects like circumference of the pole holding the swings, but, we wanted them to come to it.

So we gave them a thick chalk and asked them what they could do if they were given clay to make a model of the chalk; what all would they measure so that they could replicate it. Some children used words like circumference, diameter and radius.

One child took the chalk and explained the different aspects that he would consider for measurement, though he was not using the standard terms such as length and width. Another child when given a chance to explain the words he used was not clear what the words he used referred to. The fourth child was able to explain better the terms diameter, circumference and radius.

Children were given a thick coloured chalk in pairs to measure in pairs using the instruments that they had. One child wrapped her paper scale around the chalk but she was holding it loosely so the measurement was not accurate and the children pointed that out.

One child mentioned that she measured the length but could not measure the thickness of the chalk because she got different measurements each time based on where in the circle she placed her scale. So she concluded the thickness could not be measured. She explained by drawing a circle on the board and different lines cutting two points on the circumference and passing through the circle.

Another child put his hand up and then pointed out to her that if her lines passed through the center of the circle, the lines would always measure the same. She tried drawing many lines passing through the center and realised that this was true. After this activity, a swing was drawn on the board and the children were asked what all would they consider for measurement in order to make their own swing. Each child showed on the board what they would measure.

Child1 - length of the rope that was holding the swing

Child 2 - length of the pole



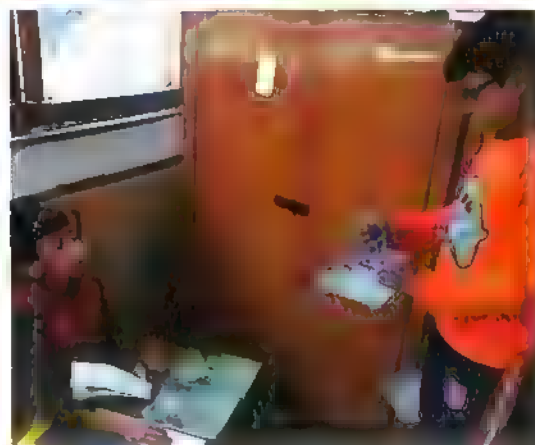
Child 3 - wooden seat of the swing  
 Child 4 - distance of the seat from the ground  
 All ten children came up with a different thing that they could measure.

Post lunch :

Children were taken to the junior play ground to explore the different play equipments to choose the one that they would measure.

Children were divided into teams. Chits were used to pair them into teams. There were four teams. During the winter season the school had the tradition of putting up new play obstacles from used material. The teachers create them. So the children chose different play things to measure. They also had to make drawings of the plaything in their book and record the measurements of each part they had observed.

One team chose a balancing beam, the other an obstacle which ended in a slide but made with junk material, the third a giant curved cement slide, and the fourth a rope bridge that was tied to two tree trunks.





In each team some children worked diligently and some would get distracted and play in between. Somehow in the outdoors that did not seem to matter. One child drew the plaything from different angles and measured everything; the curve of the slide and the cross bars of the climbing stool which were there for support. He did not miss measuring even a single detail. You could have reproduced the obstacle with his drawings and measurements.

They then sat in a circle and presented their drawings, how they had measured it, and what the measurements were. One team had measured the height and length of the large curved cement slide with great excitement. It was seven meters high and nine meters long. But one could not make a similar one with those measurements because they did not measure the curve of the slide. The Didis let it pass because they themselves could not figure out how to measure that curve.

The team with the balancing beam had, on prompting, even measured speed. For example how many times can you go up and down in a given time? Does it take the same time to go forward as to go backwards and does it take the same time for everybody.

The team measuring the rope bridge had measured the circumference of the tree trunk and the circumference of the rope. That child remarked "I would never have guessed the rope was that thick".

**Evaluation:** This was a very successful activity. This activity made the children appreciate how many dimensions have to be measured to make anything that they used in real life. The children also loved being outdoors. So the normal restlessness need not bother anyone.

Even children with diverse interests and needs could work together because the task needed children to help each other and at the same time there was a lot of distance. This was a joyful learning experience even for the facilitators. In the open, the noisiness and movements of children seemed very natural.

**Activity 10a:** The story "Footloose in the City" from the book "Forbidden Temple and other stories" by TV Padma.

### Integrating Language

#### Aim

To get children to read interesting stories about measurement since we were on that topic.

To increase reading comprehension, vocabulary and also imagination.

The story was about a boy who lived in India during the Harappan period. It was a fiction but with all the details of the period well-researched. It was also very well written and the descriptions were vivid. The boy barter a sack of grain for whatever he wants to buy. It is also a story of friendship and generosity.

**Process:** We started the discussion about whether man knew about measurement always. So some children piped in that he was a caveman first. One child knew all the ages and was talking about their names. Then we talked about how India was a very old country and nobody knew how old. We talked about how people find out what happened before. Many children knew about archaeology. We talked in plain language about what happens to old things and how when you dig you find different things from the past including villages and cities. One child talked about carbon dating. We talked about how in Ramayan

there are astronomical details which when fed into a computer now indicate that those incidents happened 21,000 years ago and so we do not know how old our country is. The children corrected that it was not a country but a civilisation. As a country we are new.

Then we talked about the Indus Valley civilisation – Mohenjodaro and Harappa - - and how the British had found it. One child mentioned that Indus Valley civilisation extended till Rakhigarhi in Haryana and is being excavated now.

Then they read the story. Some finished very fast. One child finished and worked on his paper puppet. He did not want to find new words – he said he knew them all. Another child said the same too but later we discovered that she did not know many.

Then we sat in a circle and read together, one by one. The child who had finished first read and explained.

We discussed the terms Circa, BC and AD. We calculated how long back a time the story was set in. We also learnt the words “Nagged”, “Dusk”, “Dawn”...we read two paragraphs of the story.

We moved on as each child read a few paragraphs. Some struggled. Along the way we would discuss some words.

We learnt the difference between the words:

Lively – living

Trundling – tumbling

Omelette – Amulet

Awed - Odd

We learnt what the words “Barter” and “Trade” meant.

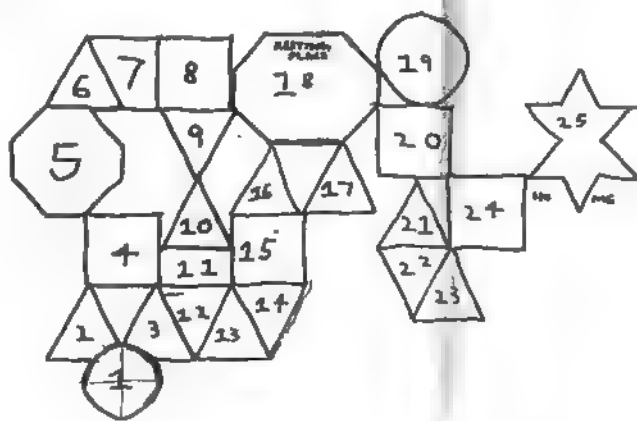
We used many of these words in sentences.

We began this activity by playing hopscotch the previous day after our lunch. Didis drew the models that they knew and played with the children. It was a fun and a new game for children. In fact the children started to think and create own ways to play the game.

When it was observed that the children were full of ideas and could not contain their excitement, we asked them if they would like to create their own models and paint them in the central yard for the whole school to play.

Children were divided into groups. They first brainstormed their ideas within the group and started putting different elements from each other's designs and came up with one design per group.

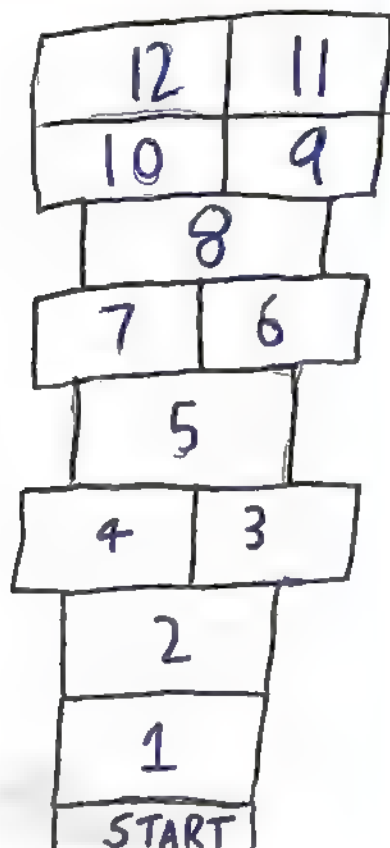
The next day they started drawing their hopscotch designs to scale in the corridor by themselves using a chalk. After this experience, children figured out the gaps in the models, went back home and fixed the gaps.



zoya

One box's measurement

Length: 77cm, width: 52cm



**Activity 10a** — Measuring heights of trees and buildings using a theodolite.

This was an activity that we found in the encyclopedia on measurement. So we photocopied that paper and we gave it to the children and asked them to make the instrument at home, so that we could measure the height of trees.

One of the Diyas had also heard a child

## Reflections

The first group had made their game with only rectangles. One child distributed the work between them. She was measuring the dimensions of the rectangle with a scale and drawing rapidly. The other two children were distracted so she gave them tasks. She asked one to start painting the lines and another to paint out the numbers in the boxes. In the second, the game was made of triangles. The facilitator noticed that it was going to be difficult to draw triangles with just a scale. She gave them the idea that they could make an equilateral triangle by measuring precisely on a chart paper and use that as a stencil. After that it became easy for the two children who worked together. They completed with minor variations to their design. They had to be shown how to paint lines neatly and uniformly. The third had many different regular shapes and you had to jump sideways and backwards and had 25 boxes. This group had children who had rigid views and had to be moderated. We had pointed out that there was a tree in between and whether they would be able to see the last box and cast the stone there from the first box. They were prompted to redesign based on the space and how the game could be played in that space. They gave up after making ten boxes. They noticed the triangular stencil and made their hexagons with that. It was satisfying for these children to see children across the school play these games.

look at a book of trees in the ashram written by children of an older group and a Diya and exclaimed, "These trees cannot be that tall!" The Diya then felt that this might be an interesting exercise.

However most of the children had not made the theodolite accurately and we had to spend the next morning on this.



Some children whose parents had explained the concept to them and helped, had done it.

- To begin with, the Didis showed the children how to measure the height of a cupboard in the classroom. The idea was to then measure it with a measuring tape and see if the results matched. Some children who had discussed this with their parents at home knew what to do and started doing this with their partners.

#### Evaluation through observation:

Most children were clueless about what was happening. They were doing what the partner was asking mechanically.

Later, we realised that we had missed out one fundamental point. Why were we using a theodolite if we could measure with a tape. We did not have a discussion on "This is used to measure really tall things that we cannot measure with a tape. We were only measuring the cupboard to check the accuracy". We should have had an extended discussion in the class, checked if all the children understood the concept before venturing out.

Also this instrument is based on the principle of similar triangles. So the theodolite has to be held parallel to the ground and raised to the eye level. All the Diyas were also using it for the first time. Almost in no case did we get close measurements. Even the slightest tilt increases the distance by a large amount. We should have tried this out first and then explained this accurately to the children.

Evaluation was done by giving them math word problems based on this activity. Some children got restless and came back to class. Then we gave them math word problems based on what they had done. That was when it became clear to us how



much each child had understood. The same ones that had discussed at home finished these problems in a jiffy and the others could not comprehend.

Since we observed that not all children in the group understood the concept of theodolite, we decided to take this discussion to check their understanding. Didi, recalling their previous days experience of measuring a cupboard, asked the children, "Why would you need a theodolite to measure when one can use the tape". To this question children replied :

Child 1: because it would be easy

Didi: How is it easy to see the top of the cupboard through this narrow straw?

Child2: it would be less riskier because with tape we have to climb and stand on something .

Child3: We cannot stand on the tip of something

Child 4: To measure something tall and far away.

Child 5: Adding on to the child 4's reply, if one has to measure the height of the mountain, we cannot hang the tape loose from the top, then it would be slanting, which is not the correct height. It needs to be straight from top to the bottom. Hence we use the theodolite. Theodolites are made up of metal.

Now the quieter children also opened up.

Child 6: I am not very clear why one would use a theodolite instead of a measuring tape or a scale .

After the children understood the purpose of a theodolite by listening to the reasons shared by their friends, we moved to the next step of learning how to use a theodolite.

Three children had understood and since they were eager to carry on the process of measuring tall trees, they were asked to

carry on with their work.

Others sat with Didi to understand how to use a theodolite.

An image on the board and practical demonstration helped them to understand the process.

M and T after this discussion, recalled the previous days math word problem and understood how they could find the height of the object if the height of a person and the distance from the person and object is given. They were beaming with joy as they discovered this.

After lunch, they went to measure tall objects around the school.

**Evaluation:** The need for this project did not come from the children. So initially they did not understand. We should have created the need by asking them to measure tall objects and got to a point where they could not measure, or asked them to estimate using their knowledge so far. Also we should have had a discussion on why this worked and hence asked them to make it carefully in the class. After making it with so much care we did not spend enough time measuring objects around, recording it and asking other children to measure and check. We did not take it to its logical conclusion and use it till the children understood. We could have asked the children to take it home and measure things in their neighbourhood.

### **Activity 11 — Making photo frames**

The art teacher also decided to integrate measurements and in this case precise measurements of smaller denominations. She got them to make photo frames as Christmas gifts for children of another



group and the message inside the frame was written in calligraphy by the Diya herself.

On the first day they had to take multiple instructions at the same time and draw parallel lines 1.5 centimeters apart on all sides of the paper. They would later fold along those lines. They had to measure and leave space in the corners. This was tough because they had to draw four or five parallel lines precisely. This was a fine work that they had not done before.

**Activity 12** — Their own measurement story. One of the teachers wrote the story of the group doing this project. The idea was to get the children to reflect on themselves and notice qualities about themselves that they could observe.

**Aim:** Through the story get the children to do reflective exercises relating to measurement.

Children will write what they needed to measure or monitor in themselves. They will read and improve their vocabulary and appreciate the style of writing. They will be able to comprehend easily because it is their own story. They will also see their own group dynamics as we see it, understand their friends and try to bring harmony.

**Process:** "The story of measurement"

which was written by a Didi based on all the experiences children had during the measurement topic and observations of children was given to them for reading. They were told that it was an individual task and they had to read the story on their own. They were asked to underline the new words that they did not understand. Many took their markers to underline. They were engrossed in the story. A few chuckles here and there were heard.

Chuckles lead to whispers saying it is about us and they started guessing the characters of the story. One child finished reading. She was requested to find the meanings of new words in the dictionary.

An instruction was written on the board "In The measurement story , number the paragraphs in the sheet given to you "

Some children did not understand and they looked at others for help. Then they began to number the paragraphs. They had some understanding of a paragraph. There was a discussion on whether one word or one sentence could make a paragraph (It had in the story). The story is attached.

After everybody had read the story, we sat them in a circle and asked them what happened in the end in the measurement story. Child 1 said "Didi was happy and asked everyone to talk to their inner friend". Child 2 said "Jack told Kalpana to check her anger and she decided to measure how many times she got angry."

Then each child came up with what quality they wanted to observe and measure in themselves. Then we asked them to write in points what they wanted to measure and also expand the paragraph. The children wrote very candid reflections.

**Evaluation:** We used humour in the story to highlight many issues in the group. This went down very well with the children and many of them absorbed what we wanted to say. For example, when we landed up in a situation where we could not agree, one child remarked, "remember Joyful group spends most of the time deciding!"

Today in the morning we took three rounds of M.E.S ground. I was not feeling tired I was most happy when Adya didi taught us to make a box and when Aseema didi taught us a box we had to measure every side to make the box. Today I was doing stiles much better than I did the previous days.

### What all can I measure in myself

How many times do I speak badly with my friends.  
 How many times do I hit people.  
 How many times do I get moody and not listen.  
 How many times do I get lazy in a day.  
 How many times do I help people.  
 How many times do I reflect upon my self.  
 How many times do I say good words.  
 How many times do I am I kind with people.  
 How many times do I argue with dadas or mama papa.  
 How many times do I speak loudly in a day.

When my inner friend says not to participate in seeing others mistakes I do not listen to my inner friend and I find others mistakes.  
 My own bad thoughts stop me from listening to my inner friend.  
 If I can see my own mistakes I will not follow my bad thought thoughts.

## *Diyas' reflections about the whole project*

The beginning: Since the project has been taken up in the past we had a list of activities that could be done and the concepts that could be introduced. We started the project with this. The struggle for us was that along with engaging the children intellectually, we had to build a close bond with them to be able to help them understand their own emotions; we needed to do this to create a learning environment. The second goal was to get them to build relationships among one another and work harmoniously. Finally the objective was for us to enable each child to express their own uniqueness.

To do this in the course of the project, we had to keep observing and enhancing our activities with this in mind.

### **First example**

To get them to learn about coins, we designed an elaborate shop game. To help us understand each child, instead of just picking up the objects available in the classroom for the shop, we asked them to make many things for the shop at home and bring those to school.

This was really exciting for them and each child brought many things made out of material available at home. The next day, instead of just displaying these in the shop, on the

go, we thought up an activity where each child showed what he had made and spoke about it. This idea came because one of the Diyas had attended a theatre workshop; she herself brought a hand-made paper puppet and showed. We made rules for the showing. The child had to make eye contact with everyone in the audience. At the end of the showing, the audience could raise their hands if they had not been looked at and the speaker would repeat again. This became a sensitising but fun activity.

From this activity we understood a lot about each child. One child had actually crafted a very realistic bird and had packed it very carefully in cotton and was convinced that it was alive and had to be cared for since it was a fledgling. Relationships were being built because one child offered to help repair the Diya's paper puppet. As our connection with each child grew deeper and we began appreciating this, the children also began noticing that and the harmony in the group began to grow.

### **Second example**

We ourselves were growing. At the end of each day we were thinking of new ideas to take forward what we had done that day. We not only collaborated with each other but also consulted other teachers who had an experience of designing practical



projects for children. The teacher we consulted was in charge of sports in the school and suggested to design hopscotch models and paint for the whole school to play.

Other teachers began integrating too. The art teacher saw how excited the children were and she began to think about how she could integrate measurement into her classes and that is how she came up with the project on making photo frames that the child could make as Christmas gifts for children of another group.

We ourselves began thinking about measurement for every situation we were encountering in the group. For example, the children in the group tended to talk very loudly. Then it occurred to us that we could measure it and then blurted out to the kids that we were going to measure the decibels with a meter. They would ask us every day. Then we enquired and downloaded a mobile app to measure it. This was great fun for them because the app would give the decibel graph and say things like “quiet like a library” or “noisy market”, “shouting” etc. One

whole morning they kept their voice low. At the end of the day we wrote a congratulatory message on the board “Congratulations, Joyful group, the decibel meter said “Quiet Library” all morning”. Then it also occurred to us (again) that positive reinforcement was better than asking them to keep their voice low. People walking by also noticed the message and commented on how nice that felt. So we understood (again) that positive vibrations spread.

### Conclusion

This project, besides providing children with opportunities to use their thinking faculty and work with their hands, with coordination, also provide us with an excellent chance to facilitate the children’s inner journey and take conscious peeks at themselves and observe their behaviours and the inner urges. There were many moments where children tried to be sensitive, become aware of themselves as a group which could work in harmony. This, we believe, would pave the path to a harmonious journey into the future.

# Petal Power

## Plant a little love, watch a miracle grow

### Why we selected this topic?

Children are naturally attracted to flowers because of their beauty. They enjoy being outdoors and observing nature. When we took them on nature walks, they showed the desire to know more about flowers.

### Objectives

- To appreciate the flower as the most beautiful part of a plant.
- To observe and identify different parts of a flower.
- To draw, colour and label different parts of a flower.
- To dissect a flower and observe stamen and carpel (male and female parts of a flower).
- To research, collaborate and present the uses of flowers in everyday life.
- To learn about unique flowers through research.
- To understand the process of pollination through a flow chart (sequencing).
- To observe and relate to different parts of a flower and stages of pollination after watching the video on these topics.

## Skills addressed

- ♦ Collection of information through reading and research
- ♦ Imagination, creativity and thinking skills
- ♦ Collaborative skills
- ♦ Presentation skills through drawing, colouring, making tables and labelling
- ♦ Observation skills
- ♦ Writing skills
- ♦ Interviewing skills

## How we planned and executed the project

The purpose of the project was to help the children to know more about flowers through experiential learning. The project was activity-centred so that the children would gain knowledge through holistic learning.

The children were given freedom to go beyond the space of the classroom – to the outdoors and amidst nature. The project activities were executed by the children under the guidance of the teachers.

The children were divided into groups, and each group chose a leader. During the brainstorming session, the group leader noted the points being discussed and the group kept the points in mind while doing the activities. The project execution procedure was decided in true team spirit.

At every step of the project, the students recorded their achievements and learnt where they needed to make changes as this would reinforce their learning.

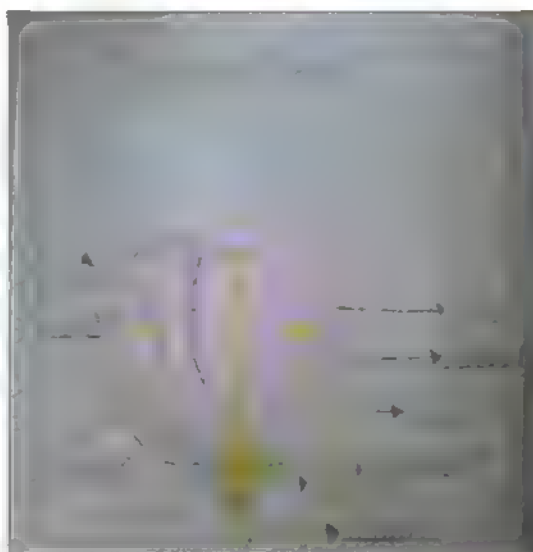
## Resources

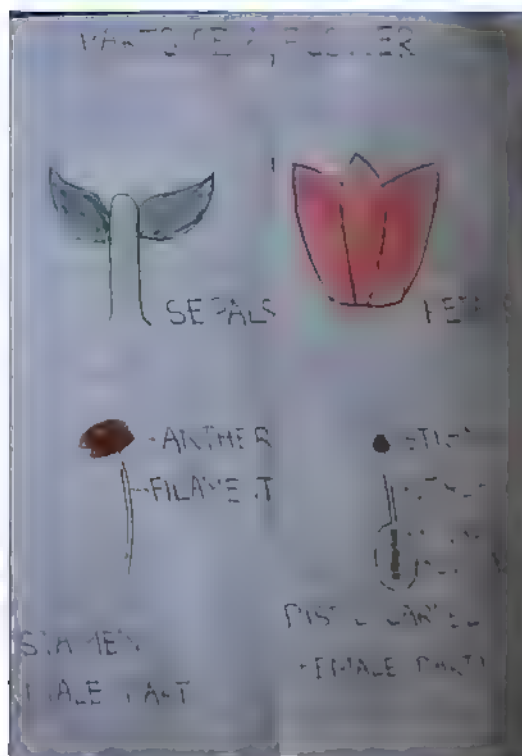
Resources play a very important role in project work. We used a variety of resources available on our campus, such as the flora and fauna, A.V. Room, Library, Computer Lab, Classrooms,

Plant Nursery in the Ashram, and of course human resources in the form of facilitators, mali bhaiyas and florists.

## Activity 1

The children dissected and observed different parts of the Lilly flower. They were able to identify the male and female parts, including ovules with a magnifying glass. They drew the flower, labelled its parts and made models of Parts of a Flower using waste material. They did this with great interest.





### Activity 2

The children grew a flowering plant, observed and recorded the changes in a small booklet (e.g. Marigold, Dianthus and Petunia).

*"I grew a Marigold plant in a small earthen pot. Then I observed it regularly for a month and wrote down observations in a booklet. I witnessed changes in height, growth in the number of leaves as well as flowers that grew. With this project, I learnt how seeds germinate and grow into a small sapling. I noticed that during winter, growth was slow but when exposed to sunlight, growth of the plant was faster. I also learnt that without water and sunlight, the plant withers."*

Class IV Student

### Activity 3

The children were taken for a nature walk around the school. They observed the beautiful flowers in bloom. After this, they were shown a slide presentation on flowers that grow in our school. After watching the presentation, they could identify the flowers by their name. They could do so because they were familiar with the flowers they had observed earlier.



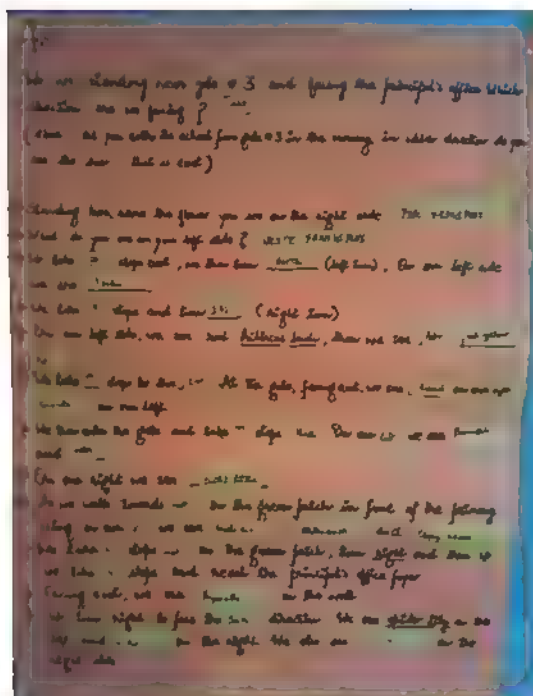
This was followed by mapping the location of flowers in the Primary wing.

The children took the project activity a step further. They moved from near to far, i.e. from the school campus to different countries (via the Internet) and



researched about the unique flowers found in some of these countries. They worked in groups, made a collage of these flowers on a newspaper, and shared the

information with their classmates through presentations.



"I participated in the mapping activity of flowers in our campus. It was a really great experience. We mapped almost all the flowers blooming in the gardens around the primary school. Some of the names of the flowers we didn't know. We researched and found out the names. We made a 3D map using flags, toothpicks, caps of bottles, boxes, etc. When the parents came, we explained to them the route of the school from the entrance (gate number 3) to the primary wing and told them the names of flowers grown along the route."

Class IV Student

**Activity 4**

The children were taken to the front garden to observe the various stages of pollination in the bottle brush plant and spider lily, i.e. from bud to fruit formation. They also watched an audio-video on pollination. It triggered their curiosity to know how pollinators help in the process.

**Activity 5**

The children researched on different uses of flowers according to the topic given to each group.

- ♦ Food/beverage
- ♦ Medicines
- ♦ Cosmetics
- ♦ Decoration

**Flowers**

*Flowers have sweet fragrance,  
They are colorful and beautiful,  
They make our life joyful,  
and are in our garden also.*

*They remain happy,  
They make us happy also,  
They are part of decoration,  
Sometimes in wedding  
and sometimes in festivals.*

*They are used in medicines,  
They make food tasty also,  
They are everywhere,  
and helping us everywhere.*

By V and N of Class IV

- ♦ Colours and dyes
- ♦ Infusion/therapy

They collected paper cuttings, images and information, and put them together in the class. It was followed by a group presentation on the given topic. The children enjoyed making homemade products under each category and shared the recipes. Their main purpose was to highlight the uses of flowers in our daily lives.

*"I made Rose Sharbat for our School's Open Day. I shared the Rose Sharbat not only with my friends but also with parents. Rose Sharbat has many medicinal benefits and it also contains Vitamins A, B, C and E. It helps to hydrate the skin from within and hence the skin looks healthy. I learned to be more organized and responsible towards my belongings. I learned how to work in a group and as a team."*

Class IV Student

*"Natural things are very effective. They work on our body and the difference can be recognized. When we talk about flowers, we think about all kinds of products, like shampoos, creams, face washes, scrubs, etc. we get in the market. But I made a rose lip balm at home. It heals our lips when they are chapped. Now I am happy that I know the recipe of a lip balm and I don't need to buy it from a shop."*

Class IV Student

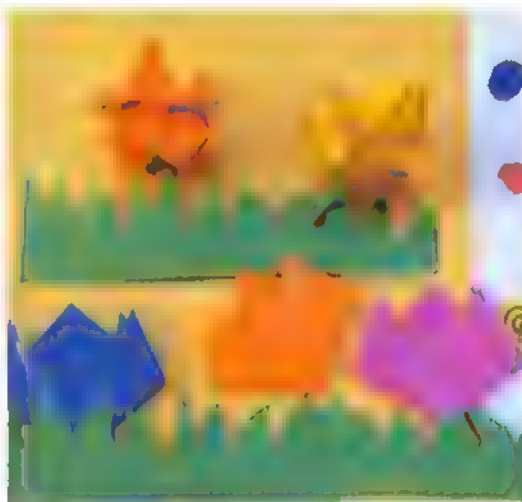


### Activity 6

The facilitator demonstrated the process of drying flowers between a pile of newspapers. The children followed the same procedure and dried seasonal flowers to make mats, book marks, photo frames, candles, coasters and many other items of utility and decoration.

### Activity 7

A group of children learnt to make beautiful origami flowers from Namrata ma'am. These children then taught others to make them. Some of them got so interested and motivated that they learnt to make intricate flowers by looking at origami books.



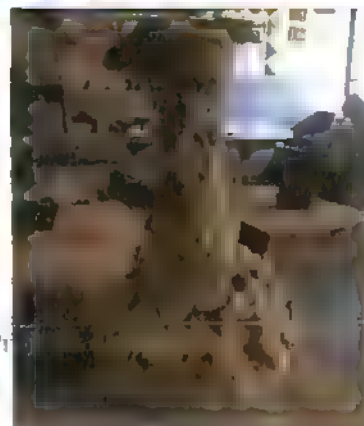
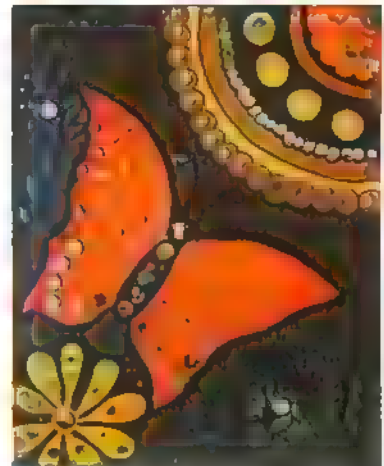
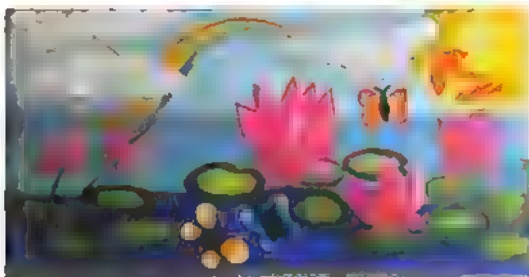
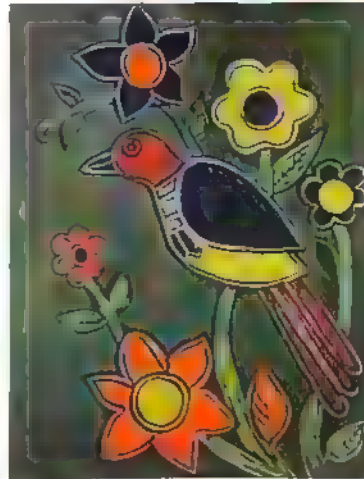
*"Origami is the art of paper folding. It started in Japan. I am personally fond of origami. I always make sure that I fold the paper neatly. I love to make robots, flowers, etc. I was selected from my class for the Open Day origami team. I taught many parents and kids how to make origami flowers. I was very pleased by their comments. After that day, I was inspired to make more complex origami items."*

Class IV Student

### Activity 8

The children also wanted to include Block Printing with vegetables to show their creativity. They made floral blocks with potatoes, capsicum and ladyfingers and printed hankies.

They made flowers with Shilpkar (clay) and decorated pots and vases with floral patterns. Later, they also coloured them. The children had learnt Madhubani, Lippan and Worli folk art in their art classes. They also wanted to include this technique to create beautiful floral motifs. They made panels with the help of their art teacher to decorate the stage.





### Activity 9

The children worked in groups. First, they made sketches of many Rangoli patterns on paper. Then they chose one to make on the final day. They also decided on the flowers they would use for making the Rangoli. The children worked together in harmony and displayed their creativity by making beautiful rangolis. Rangoli with fresh flowers was indeed very soothing to the eyes.

*"I participated in rangoli on the Open Day. I made many beautiful designs with fresh flowers along with my group members. I used marigolds, rose petals and many other colourful flowers. I learnt the names of many different flowers. Everybody clicked photos and made videos of my rangoli. I felt very happy when the parents appreciated my rangoli designs."*

Class IV Student

### Activity 10

The most interesting part of the project was that the children set up a FLORIST SHOP, where instead of real flowers they displayed flowers made from waste material. Some of the materials they used included newspapers, plastic bottles, tissue paper, etc. They also made garlands and jewellery with fresh flowers.

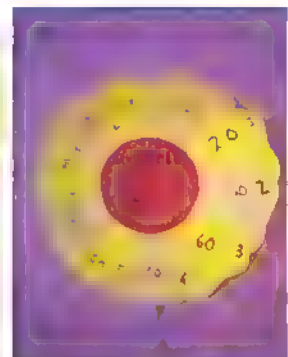
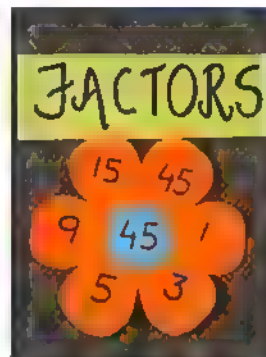


"Our Project Open Day was held on 29th Dec. The theme this year was 'Flowers'. All the students of class 4 participated with great enthusiasm. The stage performance was very entertaining. It included a Hindi play on the flowers of each state, and a skit on the role of bees in pollination. Recipes of dishes prepared using flowers were very impressive. I made a model on 'different parts of a flower' and also contributed to the 'best out of waste' section by showcasing a flower made from a used coke can. The exhibition on rare flowers was very informative. All the visitors appreciated the work done by the teachers and the students. It was a memorable experience for all."

Class IV Student

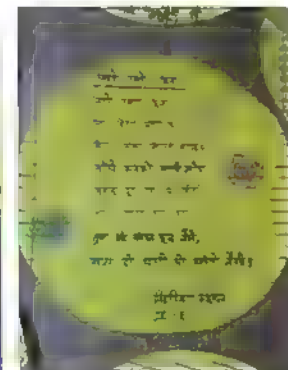
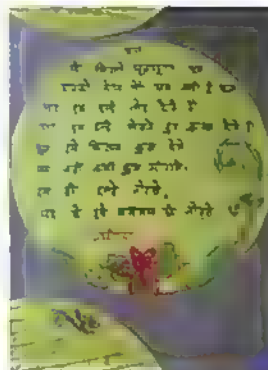
"For our class 4 E.V.S. Open Day, I was selected for Recitations. The topic was 'Flowers'. I spoke about Dahlia. According to the Mother each and every flower represents a value. The mother also loved the flowers as we all do. Flowers make us feel happy, peaceful and magical and while speaking I observed that I truly felt the same feelings in my heart too."

Class IV Student



### Social Skills

Integrating the languages through verbal and written communication activities helped the children to further enhance their learning curve. They included plays, presentation of group activities, a song on bees and pollination, recitations on the Mother's significance on flowers, writing stories and poems. When the ideas, concepts and vocabulary were repeated through various project activities, learning was quicker and deeply rooted. Comprehension skills became better and learning became more holistic and interesting through fun filled activities.



*Flowers Red & Flowers Blue*

*Flowers red and blue  
I see a little beauty in you  
Let your colour shine  
And let me meet you even when I am  
nine*

*I will lay near you  
And I would see another flowers  
bloom*

*All the flowers are beauties  
And the little buds are cuties*

*Flowers have a wonderful smell  
I hope they are doing well  
That's what I would say  
To them while I sit on the hay*

*Flowers say – look, look at us please  
And just like us, bring happy breeze!  
By S of Class IV*

*Reflections by the teacher*

The purpose of the project was to help children build enthusiasm through experiential learning. The students learnt how to take initiative and be responsible. It built their confidence, helped them to become focussed, solve problems, work in teams, communicate ideas, and manage themselves more effectively.

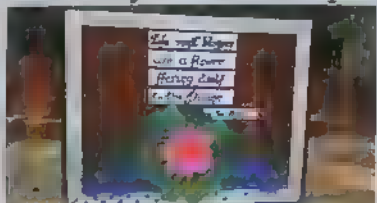
When children are interested in what they do and are able to use their strengths, it becomes easier for them to attain their goals. This was clearly evident through the project on flowers. Through their exciting activities, they found innovative ways to learn many scientific details about flowers which they would not have remembered in the conventional pedagogical approach.

As facilitators, it reaffirmed our belief that many educational topics can

be covered simply by being amidst nature – because right from the ancient times nature has been man's teacher.

The Mother says trees, plants and flowers are beautiful symbols of nature's aspiration towards light. Light is the symbol of the Divine. The Mother said when she gave flowers it was an answer to the aspiration – the aspiration to progress and find inner harmony. According to the Mother, one must be like the flower: open, frank, equal, generous and kind.

Keeping the Mother's thoughts in mind and wanting the children to appreciate nature through her eyes – to find joy in learning, to progress, to live in harmony, to hone social skills and guide young individuals to become confident adults. The topic of Flowers was truly an apt one for class IV children.



# India

## The beginning

*Just before the summer vacation, the children were asked about their holiday plans. Some said that they would go overseas to visit their relatives, while others said that they would go around the country for sightseeing. A few others said that they would go for camps and trips to the mountains in India. When they were asked what project they would like to take up when they returned in July, the instantaneous and spontaneous answer by most was 'Countries'.*

*The idea of a project about countries may have come to them because some children were visiting other countries or because they had studied India in earlier years. When we take up any project related to the children's needs, desires and inclinations, their involvement, self-motivation and curiosity to learn is high. So was it for our project on 'Countries'.*



## Planning

By the time the project was imagined, the group Diya had spent a month and a half with this group of children and had a fair idea of their abilities and skills, their working culture and interpersonal relations, their strengths and weaknesses, their level of reasoning ability and intellectual capacity for self-study, their language proficiency in English and Hindi, the background of each child, their parents' professional work and the level of parental involvement with the child's study. All these observations were very relevant to planning an appropriate programme. While planning, we bore in mind how much help and support the parents can offer in terms of providing content materials, engaging in dialogue with the child, and helping in language and skill development.

It was observed that at this stage (age 9+), the children are more comfortable with narrative and imaginative work. They are comfortable remembering facts and information rather than logically reasoning things out. They absorb more by doing, making and seeing rather than reading or listening. Activities were planned accordingly. When one aims at development, one should include activities to develop reason. Some children live more in their minds than others. The beauty of project work is that not all children have to do the same activities.

We began with our own country India, thus implementing another principle of true teaching by Sri Aurobindo – 'learning must be from near to far'. We decided to learn first about our own country and then study other countries.



By choosing India, they could experience how India is a remarkable country made up of so many different states, each the size of a country, with different languages, festivals, food, clothes, customs and so on.

### Implementation

#### Brainstorming

Our projects began with children putting forth their questions and ideas related to the topic. Each child wrote down what he/she would like to learn about or know more about. Based on these questions and ideas, certain aims were consolidated, and this helped to shape the project.

In the case of project India, here are some of the aspects that the children were

curious about:

- I want to know the names of the states and Union Territories.
- I want to know how different celebrations are held in different states.
- I want to know about the tribes of India.
- I want to listen to the folk stories of different parts of India.
- I want to learn about different languages, traditional costumes and foods.

### Aims

#### Objectives for physical development

- To develop flexibility, coordination, and sense of rhythm through learning different dance forms of India.

#### Dancing

The aims were to develop physical flexibility, coordination, sense of rhythm and grace of movement. This project was executed during the months of July and August. The group was discussing and looking for ideas about Independence Day celebrations. A few girls suggested performing any Indian classical dance. It is likely that this thought emerged since they were working on the topic of India. After some research, the group agreed to

dance to a song titled 'Jai bharati, vande bharati' in Kathak style. A Kathak dancer taught them the basic dance movements. The group danced on 14 August on the occasion of Independence Day celebrations in the school. They danced with complete involvement, their feelings of patriotism tangible and the full expression of each word of the lyrics demonstrable.



- To increase agility and stamina through learning and playing village fun games of India.

### **Objectives for vital development**

- To develop respect for other religions and elders, to strengthen feelings of bonding, to become interdependent by learning different languages, tasting different foods, celebrating different festivals and wearing ethnic dresses of different states.
- To develop patriotism and heroism by listening to stories of great national heroes of India.

### **Objectives for mental development**

- To develop visual understanding.
- To build memory and comprehension ability.
- To hone reasoning skills.
- To nurture love for the nation.
- To invoke the sense of responsibility.

### **Objectives for psychic development**

- To develop feelings of devotion, sacrifice and forgiveness by relating to the characters of mythological, religious and traditional stories.
- To reflect on how such stories and incidents help them grow within.

### **Academic objectives**

- Locating India's geographical settings: rivers, mountains, deserts, plains, neighbouring countries, surrounding oceans.
- Learning the names of states and their capitals, Union Territories.
- Identifying famous monuments from ancient, medieval and modern times.
- Explaining achievements in ancient India through mythological and life

stories of great people.

- Celebrating national days with relevant songs, plays and stories.
- Collecting information on and reporting on states and their cultures.
- Speaking in and singing songs in different languages.
- Developing love for and pride in our country, and a sense of ownership and patriotism.

### **Activities**

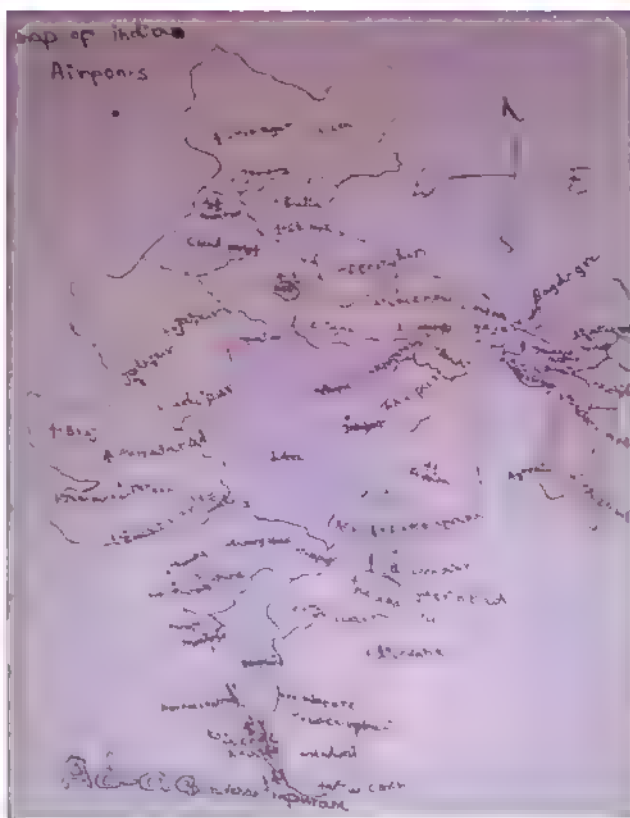
An array of activities to achieve these aims is part of the children's daily routine. This implies that project work is not limited to project time alone. Some of the activities are explained below.

### **Familiarisation with 'direction'**

The aim was to develop language skills in expressing their thoughts in an orderly and precise manner. The children were to give a written guide to a visitor who is waiting at the school's reception. Guide him from reception to the school library by writing step by step directions on how to reach the destination. They were given hints to use phrases like 5 steps forward, left turn, walk until you reach a water cooler and you will see a small straw hut on your right. Children started writing down promptly. One by one, each child was asked to read out their instructions and the whole group followed. To their surprise after the second or third step, their instructions led to different directions rather than towards the library. They kept rewriting and correcting their instructions until the group could reach the library.

### Learning mapping skills

The aims were to develop power of observation, eye-hand coordination and ability to concentrate. The children were shown how to draw a free hand map of India on the blackboard, taking as little time as possible and erasing as little as feasible. They were given 15 minutes in which to draw, and three uses of the duster. This activity was repeated four times with all the children to help them gain confidence and achieve perfection. The children also drew boundaries of the states, marked the airports, and drew the railway route from Gujarat to Thiruvananthapuram.



### Reflection by Diya

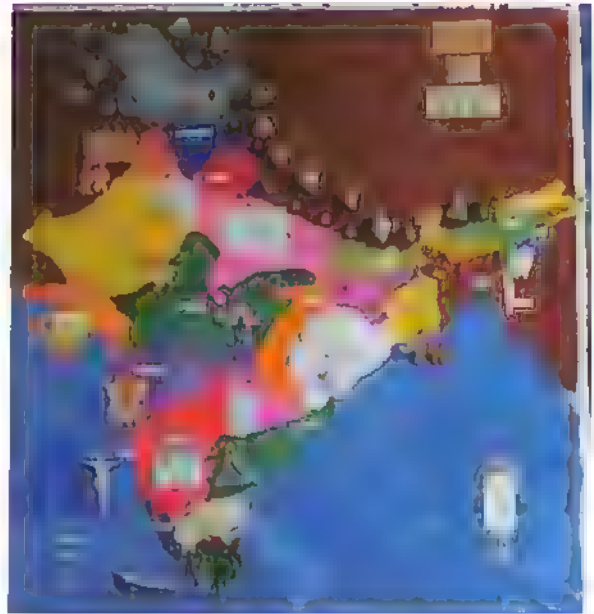
This activity was found to be very challenging for all the children. There were some children who could do it with little concentration and focus, there were some others who found it very hard to copy the drawing. The Diya used a few methods to improve their skill. First of all, the children who found it very tough, started to lose their interest after the first try, since their India map did not come anywhere close to the real one. In the mean time, some children finished their map with

almost close accuracy. This was shown to the others for motivation. Then they were asked to divide and observe the map in the atlas – distance from the edges, the shape at Jammu and Kashmir, Gujrat and Kanyakumari. Also they were asked to notice the size of the map as rectangular or square. Finally a few more could come up to a legitimate figure of the map. One child could not come up to this level even by trying 4/5 times.



### Making a 3D map of India

The aims were to achieve precision in measurement, ratio and proportion; to develop fine motor skills and model making skills; and to hone affective domain qualities – cooperation, harmony, leadership and respect – so as to work well in a team. The children drew the map of India on a board measuring 6X6 feet and pasted white paper on it. They then demarcated the states and placed different indicative models at appropriate places, such as camels and tigers and where they lived, coconut trees and where they grew, the Himalayas and where they stood, and so on.



### Making a globe

The overarching aim was to offer the children an opportunity to learn for themselves while creating a globe as an organic team.

Perspectives on time zones and temperature zones as well as distances and proximity of landmasses, water bodies and continents were observed, understood and then the globe took shape with this understanding.

Children took two weeks to understand these bases before they started making the globe. Many mathematical calculations were done to find out exact points on the globe to draw the Equator, Prime Meridian and other latitudes and longitudes. Children began by figuring out the position of the Equator and the Prime Meridian and then drew these carefully. With these in place, latitudes and



longitudes were drawn with accurate measurements. This defined the time zones well. With these in place, the locations of India, other countries, continents, and oceans were marked out and they were drawn in their correct positions. Children joyfully completed the globe by colouring in the countries and continents. With the help of the carpenter bhaiyya, the group Diya constructed the framework for the globe.

## *Reflection by the Diya*

The Diya, or the project facilitator made a point that all the work in making the globe must be done by the children and according to their pace. No expectation, no time limit was set. Mostly these two aspects create tension and pressure on the Diya and that is transmitted to the children without being aware of it. So the work began by measuring the size by two/three children who used to arrive at school one hour before the school's starting time. They were keen as well as had the aptitude for mathematics. Early in the morning they would say, Bhaiya, shall we start marking the equator and latitudes? There were a few children who were good at drawing maps precisely. They spontaneously came forward for this work. It was a huge task to draw the world map for a 10 year old. When they were thinking of Asia and Europe they used to lose their hope and confidence. With the principle of easy to complex, they started with drawing Australia, Africa and South America. Apart from the project period, they spent their leisure period to draw the continents. It was

a nice moment when a younger group child, passing by the globe while we were working, commented, 'Arctic circle passes at the middle of Alaska. Here you have made it wrong.' Yet another child observed, 'you have not drawn Madagascar'. The group took all these inputs and made corrections. This collective work gave the opportunity to each one to offer his/her skills and talents. While the continents were being drawn, one could see the children who were more keen in art and craft, sitting quietly and not getting involved spontaneously. As soon as the colouring part came those children took the leading role forgetting their food and play time. The Diya had a positive impression about a child, but during this activity it was found out that she had an antagonistic and possessive nature. The Diya realised that one needs to create different kinds of work to see the true nature of each child. Later, there were a few reflective sessions with the child to make her aware of this and to help her come out of that negative attitude.

**Learning languages**

The aim was to develop skills of listening and remembering. The emphasis was on correct pronunciation. The children were asked to learn two languages of their chosen state and speak at least five sentences in those languages. This exercise helped them to reach out to people outside of the school community (with their parents' help perhaps) and appreciate a new language. The children were also taught three songs in Ladakhi, Assamese and Gujarati.

**Ladakhi song**

*Elahe fungse khas ne strok  
Judaye ma ka na mastrok  
Yare shazday nazar chek jok  
Chorelay ram chani mendok  
Beama sursur mashaz yangla  
Beameng nubsay daysay youngmad  
Naya chunchay mashas yangla  
Naya chunchay sefath youngmad  
Qadam to hosh sa rakhna  
Ye to pashkum ke wade ha  
Nazar jitne be ache ha  
Magar bathnam hota ha*

**Assamese song**

*Ei maatire moromote  
Maatike sumilo  
Ei maatite jibon sobi  
Aanki aanki mosilo  
Door aakahar rohon kiyono laage  
laage  
Haagor tolir maanik kiyono laage  
laage  
Aanha aanha  
Maatir bukut monor maaloti butolon.  
Monor koronire hooror paaporire aazi  
Hukumar thaapona hozuwa  
Hundor, hudinor  
Notun dristikona nomuwa.*

**Gujarati song**

*Akashganga, surya, chandra, tara  
Sandhya, usha koi na nathi  
Koni bhoomi, koni nadi, koni sagar  
dhara?  
Bhed kewal shabde, amara ne tamara  
Akashganga, surya, chandra, tara...  
Ej hasya, ej rudan, asha e nirasha  
Ej manav urmi, pana bhinna bhasha  
Akashganga, surya, chandra, tara...  
Meghadhanu andar na hoy kadi jango  
Sundarata kaj banya vividh rango...*

**Reflection by the Diya**

During singing sessions, it was observed that two boys used to stare at each other and not pay attention. But they were good singers. When they were pointed this out constantly for a few days, gradually they focused on singing.

**Collecting information**

The basic focus was to acquire study skills such as using a library and processing information. Children learnt how to locate books in the designated stacks and shelves; select the most appropriate book for their reference; read the text and take notes; find out the meanings of the difficult words; and rewrite their learning in their own language.

The children were asked to list the areas in which they wanted more information, on their chosen states. Then they read books from the library and wrote about various facets of their chosen states: monuments, arts and culture, water bod-

ies, regional foods, festivals, spoken and written languages, famous cities, folk tales, gods and goddesses, dances, tribes, types of houses, sports, popular places, state symbols, wildlife, forests, and so on – but all in their own language. This helped them to learn about their topics in depth, and also learn from others who had done similar research on other states.

#### **Self-made interview questions about Uttarakhand**

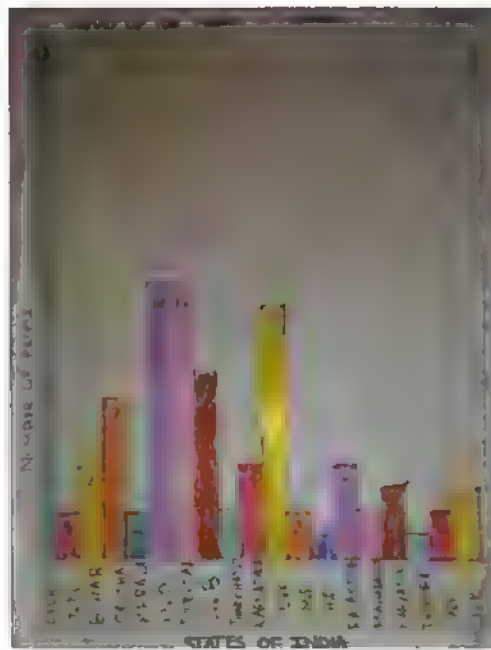
1. What are the most important gods and goddesses of Uttarakhand?
2. What is the most famous food of Uttarakhand?
3. What are the tribes living in Uttarakhand?
4. What is the special or most important crop of Uttarakhand?
5. What clothes do the people of Uttarakhand mainly wear?
6. What are the most popular places in Uttarakhand?
7. What are the famous dances of Uttarakhand?

#### **Solving jigsaw puzzles and playing top trump cards on monuments**

For better assimilation the group used to spend time in solving jigsaw puzzles of the world map and playing cards on monuments. These activities were organised spontaneously by the children. They had got the puzzle set and cards from home.

#### **Learning the art of interviewing**

The aim was to build confidence to frame an appropriate questionnaire and interface with adults to receive the answers. The children of this group belonged to different states; in some cases, both parents too were from different states. This diversity provided an opportunity to gain information about many more states. The children prepared a set of questions and interviewed their parents. In this way, the parents were also engaged with the project. The children also undertook a survey in the school to find out how many students and Diyas belonged to different states. The data was represented on a bar graph.



#### **Reflection by the Diya**

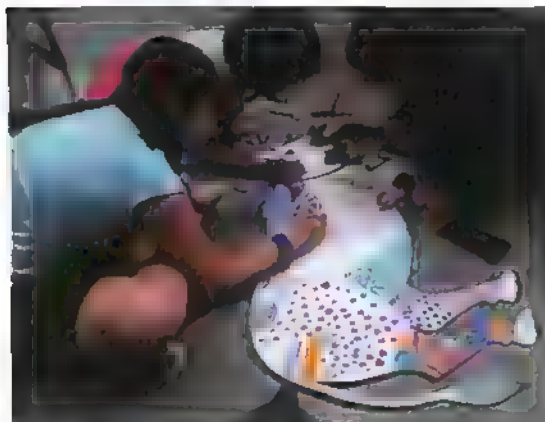
Most of the children were comfortable in carrying out the

research work. There were a few who found it hard to take notes on a variety of aspects. They were satisfied with a little information.



### Storytelling

A story from Tamil Nadu, about a devotee of Lord Shiva, Karaikal Ammeyer was narrated. Her love, devotion, constant admiration and focus on Him were exemplary. The children listened to the tale with awe. The story of Rani Padmavati of Chittorgarh and her sacrifice was also narrated. Both the stories made a deep impact on the children.



### Engaging in arts and crafts

The aim was to invoke creativity and develop fine motor skills, such as precision in drawing shapes, and cutting and pasting. Each child made a three-dimensional flag of India. They also made models of the banyan tree (national tree) and the peacock (national bird). The focus was on making the children aware of colour combinations, on achieving precision in cutting and pasting, as well as on inculcating a sense of national awareness and responsibility.



### Making a booklet

The main aim was to develop an individual capacity to organize facts, make drawings, write poems and frame questions. Secondary aims included developing skills of writing without making mistakes and inspiring an aesthetic sense in designing each page.

To maintain a record of their individual as well as team work in all the activities and experiences listed above, the children prepared booklets. Each child had chosen a state so they collected information about their state, drew maps, made drawings of the state's costumes, food, tourist spots, state symbols, and geographical features such as mountains and rivers. The booklets were colourful and interesting. All the work was done by the children themselves.

#### Presentation 1

The children were given time to study and collect information on their chosen states. Once the children were ready with basic information, they were asked to share their learning with the group. It was observed that though they had understood what they had written, they could not speak about the subject from memory. They all had to read what they had written.

#### Presentation 2

Almost 15 days after the first presentation, the group presented again to other groups of children in the school. The presenters now wore costumes of their states and recreated the atmosphere of Indian culture. Though they still read out the information, these were friendly, educative and interactive sessions.

### Play on Ramayana

The group took up the epic poem, Ramayana, as part of an attempt to explore Indian culture for the occasion of Durga puja. The main objective was to generate the children's interest in Indian culture and language and build the capacity to understand stories of valor, courage and right behaviour from our past.

**Activities:** We began a month before the Durga puja celebrations by listening to the whole story of the Ramayan and took about 10 days to finish the story telling of the entire epic. This was a very exciting part for the children as they knew many of the stories and now here was a platform where they could piece together the different stories in one flow. They were very excited as the storytelling happened and would immediately interrupt and say, "Didi, I know this story." Many children like AT, AS and NC went back to their grandparents and reconfirmed the stories they knew. This helped them spend time with their grandparents, yet another opportunity to strengthen their bonds with them.

The children chose one character each

from the story and researched about that character and presented to the others in the group when that part came in the story. This was very well received by the children and with great enthusiasm they researched the chosen characters and told their stories in the group. One child chose the character of Kumbakaran and was very happy during her research to discover that he was not totally lazy but it was a trick of the Devtaas which made him ask for a boon where he would sleep for six months and be awake for six months. The child said, "दीदी इसका मतलब देवता में भी कुछ कुछ गड़बड़ सोच है। और सभी राक्षस बुरी नहीं होती है।"

Next, we came to writing the chaupaiyas. The children understood the chaupai style of writing and wrote the Ramayan chaupaiyas in their own words which finally was presented in the form of a dance drama. All the incidents of the Ramayana were divided amongst the children so that each child was writing on 2 to 3 incidents. Initially some children said that they would not want to take certain parts. We moved them around so that each child was happy and interested in the parts that they were writing for.

We took about four days to write the chaupaiyas and then the diya compiled them together in one flowing poem.

### The Dance Drama:

A dance drama was developed and enacted by the children with the chaupaiyas they



had written as the background score. The children were very excited about the play and practiced well to make it a success. They came forward and chose the characters they would like to play. Many children had multiple roles, like L, who was Manthra, a Sakhi, a Rakshas; A played Kewat and Ravana, and they were able to change in and out of costumes on time and do the entire play with great responsibility and poise. Some children who greatly enjoy music and dance were at their peak, like A who was leading the singing of the chaupaiyas and doing two roles in the play. The duration of the drama was 35 minutes.

**Evaluation:** This project involved the children deeply. They knew many stories from the Ramayan but were now able to thread them together in a sequence. They were able to analyse and understand the characters deeply. When writing the chaupais they developed their creativity, sentence formation and vocabulary. Added to all this was a sense of devotion to the Lord and pride towards our nation.

### *Reflection by Diyas*

This was one of the best topics for this group as it managed to include and interest every child. Each child found something for himself/herself to excel in here. Some children were very interested in the stories and characters, some in the music, some in the drama and some in the writing.

### *Reflections by children*

The children were asked what they learned from the whole duration of this play starting from writing to performing. A said "Andar aapko jitni chah hogi toh utni ache se kaam hoga". As much as you want from within you will do that much better. This child had taken up 5/6 roles in the play and he acted with full confidence, expression and emotion. All liked his performance.

**On Self realization:** During a group reflection session after the Ramayana play, each was given turns to share their learning, opinions and feeling. As normally children are excited to speak and shout, T also behaved in the same manner. She kept saying, "can I say something". The Diya allowed her to speak though it was not her turn.

Immediately T realised what she was doing. She said, "A hasn't got a chance yet; she should speak. I will wait". Then the Diya told the group, "I was asking the same thing; how much will I control you. It has to come from within".

**On writing Choupaiya:** J said "I had no idea when I was writing the *choupaiya* and I struggled a lot. And then what I had written those lines were accepted by didi and came in for the play." Another child, B, reflects: "Like J I didn't get ideas too. I didn't get ideas at school. I went home and tried but could not get any idea. I went to sleep but I could not fall sleep till 12. Suddenly I got ideas and then I rubbed everything what I had written and wrote everything fresh. Then I slept well." This is an example of how the child took responsibility for his work.

**On feelings:** P said, "I was feeling a little ill yesterday and I wanted to come for the play and went to sleep early." Then the Diya said, "Should I call up your mother to take you home?" the child said, "No, I learnt to never give up".



### Means of Evaluation

**Observation:** The major tool of evaluation was through constant observation by the facilitator and giving feedback to the children as and when necessary.

**One-to-one interaction:** This was yet another tool where the facilitator would question the children and evaluate the level of understanding of the subject. In this process, any academic difficulties faced by the child(ren) and emotional and inter-personal conflicts also came to the fore. Through all these ways of interaction and observation, the teacher gathered knowledge about each child's ability to think, assimilate and utilize the concepts being taught; to create, imagine and reason; to work with cooperation and in harmony; to lead; and to display self-reliance and responsibility.

### Peer group feedback

After any presentation or team activity, the group would sit together to discuss each child's work and performance. Everyone would comment on what they

liked in the presentations, and would also give suggestions for improvement. All the children received the feedback positively.

### Self-reflection by the children

At the culmination of any project, children are given a set of questions to reflect on:

- What did you learn from this project?
- What did you like the most while working on this project?
- What part of the project was not very interesting?
- What part of the project was difficult to understand?
- How would you like to work on the next project?

The process of responding to these questions helps the children look deep within and recollect experiences, memories and anecdotes for the purpose of sharing. It also enables self-realization on how they can make further and deeper progress. There is much difference between what a child is told by the Diya and what the child realizes by himself or herself.

*Quiz: The children were periodically asked questions, such as the following, about India's states.*

1. How many states are there in India?
2. How many Union Territories are there in India?
3. Name the national anthem of India.
4. Name the national song of India.
5. Name the neighbouring seas and oceans of India.
6. Name all the neighbouring countries of India.
7. Name the northernmost state of India.
8. Name the two southernmost states of India.
9. Name any two western states of India.
10. Name any two eastern states of India.
11. What are the capitals of these states?
  - a. Manipur
  - b. Madhya Pradesh
  - c. Meghalaya
  - d. Kerala
  - e. Karnataka
12. Name the states that touch the Bay of Bengal.
13. Name the states that touch the Arabian Sea.
14. What is the official language of the state of Goa?
15. What language is spoken in Kerala?



## *Reflections by the Diya*

Reflections are an important and ongoing part of project work to both the Diya and the child. It helps them evaluate the appropriateness of an activity in terms of the learning it provided for the children. It helps them understand where a child's potential lies and helps them strengthen that area while giving the child the opportunity to explore many other areas she may not have a keen interest in. It has been observed, that in each successive project the child is consistently drawn to her interest area, thereby strengthening it. The reflection activities help to identify the areas which the child needs to improve and to provide opportunities for development.

It is very important to identify the child's natural inclination and interest. One can call it *swadharma* of the child. During the project India, it was observed that T was not taking so much interest in research work, studying and finding facts. However, she enjoyed singing and chanting. She used to keep talking about different Indian classical dance forms. So it was planned that they should learn a dance and a few songs in different Indian languages. The child was very happy, enthusiastic and self motivated towards these activities. She picked up the tune and remembered the lyrics of the songs very fast. She used to remember each and every step of the dance and used to practice at home without being told to do so. She showed graceful movements and beautiful expressions in dance performance.

There was another child who was very comfortable with languages: spellings, meanings, expressions and interest in reading. She kept insisting on learning languages of different states. So the activities of writing five sentences of any state language were assigned. She did them happily. Along with this, songs in three different languages were taught. One could feel her joy and excitement and involvement in learning the same all through.

## *Reflections by children*

**By D:** In the India project, we worked on mapping skills and showed railway lines, domestic and international airports. I found them little hard because it was a little difficult to draw and confusing also. The easiest I found was to remember the names of the capitals of the states. It was fun also because we played many games on them. Our Diya asked us the names of the state which are in the northern part and asked our neighbouring countries and told many interesting things.

**By V:** I learnt a lot of things and it was difficult. I learnt to make maps. I took West Bengal to work on and I learnt a lot about the history of it. The most difficult thing to understand was about latitudes and longitudes. But now I feel that is good that I learnt them. I am glad I went through that difficult time. Now I realise I liked doing longitudes and longitudes the most. What do I want to improve in future project? I want to make the project files more beautiful. I would make a handmade file which would contain more information.

### Evaluation

By the end of the project, most children had learnt how to draw the map of India precisely. They are now also familiar with India's immediate neighbours: countries as well as water bodies. Many of them were very imaginative and creative in making their booklets. Some have the ability to reason out and think in the abstract. It was discovered that two children depended to a great extent on their parents to complete their booklets. As far as motor skills were concerned, all but one possess fine, artistic and precise sense of colour, arrangement, and cutting and pasting. Personal interaction showed that a couple of children had certain problems with others. Two children demonstrated leadership qualities and managed the dance practice when the dance Diya was not present. One child could lead the singing activity without the Diya. Most children recall the names of India's states and Union Territories. Their ability to collect information improved, compared to the project done before this, but they still found it somewhat difficult to narrate their findings during presentations. Barring a few, they read

out happily from their booklets. As a whole, their awareness about unity in diversity has improved by learning about songs, dances and festivals.

At the end of the project, we could see the result of small inner changes in the children. In the reflection of a child after the play, 'Ramayana,' the child mentioned, "... as much you want from within to grow and take up challenges, you will be able to do them perfectly". This strength comes from the inner layers of the child. The quality of perseverance was also seen in some other children during the Ramayan play. Most of the children could recognize their inner potential in varied activities such as love for music, love for design and love for poetry and love for languages.

Project India was completed in 25 working days. We worked actively and regularly on research and learning everyday for an hour. It paved the way for the next project: The World, and later the Universe.



## The Universe

### **How did the project evolve?**

*There was a boy in the group who loved space. He kept talking, thinking and sharing information and facts related to the solar system and celestial objects and events. He read a lot about the subject and watched videos on YouTube. There were a few more children who had great curiosity to know about the mystery of space and how our earth was formed. Basically the project emerged from the children's interest and curiosity. There was another probable reason for this project. When the group was working on their Countries project, there was a lot of discussion about the earth and seasons. At that point many questions related to revolution and rotation were not answered in depth. Maybe all these together created interest in all the children to take up this project, The Universe.*

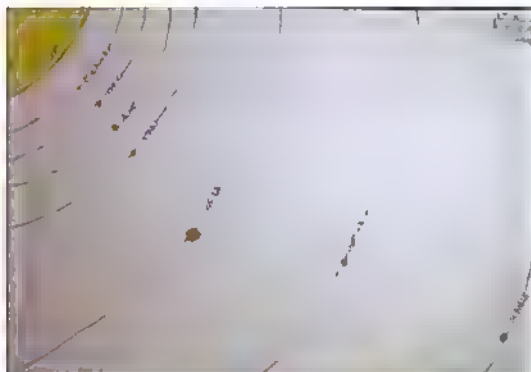
## Aims

### Objectives for physical development

- To develop fine motor skills in fixing small nuts and bolts while making working models.
- To develop skills of cutting, joining, and pasting while making working models using cardboard boxes.
- To develop skills of using brush for fine works.

### Objectives for vital development

- To appreciate courage and faith in oneself from the life of astronauts.
- To relate to feelings and moods in different seasons.
- To become aware of inter-personal relations among friends.
- To become aware of inner freedom and dominating nature.



### Objectives for mental development

- To develop faculty of comparison – similarities and differences between inner and outer planets.
- To develop critical thinking ability – the reason for change of seasons on earth, the occurrence of eclipses.
- To develop skills of listening, comprehending and expressing in own words.
- To develop computation skills.

### Objectives for psychic development

- To admire the vastness of the universe.
- To learn to accept everyone with their strengths and weakness.

## Reflections by the Facilitator

After the measurement of Mars, when the group was busy measuring the position for Jupiter, a child commented, "Oh, look how far we have come from Mars and still we have not reached Jupiter. Our solar system is really big." No matter how much we understand this theoretically it does not provide the same understanding as when we do experiential activities.





- To learn to become receptive and fearless in order to accept own shortcomings.

### Detailed description of each activity

#### A. Planets of the Solar System

##### 1. Watching BBC Documentary - Voyage to the Planets

This documentary series shows five astronauts visiting planets in a spaceship called Pegasus. They land on Venus and Mars and take samples of rocks and photos. They visit Jupiter and its moon IO and Europa, the rings of Saturn, its moon Titan, go up to Pluto and on their return land on an asteroid. They lose one life during this trip.

The aim was to improve the children's ability to listen to and understand English, ask questions to clarify doubts, and write what they saw. They watched for 20-30 minutes per day, followed by deep discussion, covering various areas — delay in communication, gravity, mass, temperature, as well as materials such as sulphur, hydrogen and silicon.

#### *Reflections by the Diya*

It was observed that children used to copy text from books. To encourage them to think and write using their own language, they were asked to write what they had learnt and understood from the video for each day. Some children found it very difficult and kept grumbling. One child was always copying things and was not able to write poems or stories from his imagination. He said about this activity, "Bhaiya wants us to write from our minds." This type of writing for a week or so helped him to improve. The other children too could describe in detail, making the activity a success.

##### 2. Differences between Inner and Outer Planets

The aim was to develop classification skills. For that one needs to observe, notice and collect enough facts. One needs to reason out the planetary positions. The children were given time to study all the planets in detail and then watch 'Voyage to the planets'. All these activities helped them to have a comprehensive understanding of the planets. Towards the conclusion of the programme, they could think of as many as 10-12 differences.

#### Poem on Solar System by a child

*I am the sun*

*I give light to everyone.*

*I am a burning ball of fire*

*You think you can touch me*

*But I am much higher.*

*I am Mercury*

*My core is bigger for my size*

*I am the smallest one in size*

*I am bigger than moon but only a bit*

*I take 88 days to orbit*

*I am first planet from the sun*

*That's why I am the only one.*

*I am Venus*

*Earth and I are similar in size*

*I am 3rd smallest in size*

*I am smaller than Earth, just a bit*

*I am Earth's sister planet*

*And I take 225 days to orbit*

*I am second brightest after moon in the sky*

*But I cannot fly.*

*I am Earth*

*I am the only planet which has life*

*I am Venus's brother*

*But I am not her mother*

*I am bigger than Venus just a bit*

*And I take 365 days to orbit.*

*I am Mars*

*My mountains are very high*

*But I don't fly.  
I have a lot of solar wind  
And a bit of solar flare,  
I am smaller than Earth,  
That's not fair.*

*I am Jupiter,  
I have more than 60 'moons',  
So see me soon.  
I have a pattern on me  
And a giant red dot,  
That is actually a tornado spinning on  
that spot.*

*I am Saturn,  
I have beautiful rings,  
Made out of dust, rocks and other things,  
The most visible rings are mine,  
But I don't have trees of pine.*

*I am Uranus,  
I am a bit different from others,  
Because I rotate on a different angle,  
And I am not a triangle.  
I am the coldest,  
But I am not the oldest,  
I too have rings like Saturn,  
And I have a blue-ish pattern.*

*I am Neptune,  
The last planet of all,  
I am made out of ice,  
My rings are nice.*

Neptune 1500 million km. The group then decided to do a solar walk, measuring 20 steps from the 'Sun' as 20 million km, 36 steps as 36 million km, and so on.

In a similar exercise to compare size, the Sun was taken as a basketball. The children were asked to identify objects that would represent the planets proportionately. The children came up with the ideas of Mercury as a mustard seed, Venus a small pea, Earth a big pea, Mars a moong daal, Jupiter a lemon, Saturn a table tennis ball, Uranus a strawberry and Neptune a big chana (gram). Each child became one of the planets according to their own physical size. The smallest child in height became Mercury. The group went to the football ground and placed the basketball at a place and measured 20 steps from the basketball for the smallest child to sit as Mercury. Similarly, each planetary distance was measured in steps and the assigned child took the position. Once all were set, the children were asked to stand at the position of earth to view the imaginary sun (basketball) with hands straight, and then with the same size of finger space the children were asked to view the real sun using solar glasses. The real sun looked approximately the same size.

### 3. Solar walk

This activity was done to develop the faculties of reasoning and comparison in relation to proportion, ratio, shape, size and distance. We found out and noted down the distance of each planet in the solar system from the sun. This distance was then scaled 3 million times. The reduced distances were: Mercury 20 million km, Venus 36 million km, Earth 50 million km, Mars 77 million km, Jupiter 260 million km, Saturn 466 million km, Uranus 956 million km and

The whole exercise gave the children an experiential understanding about the inner planets and the outer planets. The inner planets are closer together and the outer planets further apart in comparison. Normally, when the children are asked to draw the solar system, they place the planets at equal distance and they draw the planets with minor differences in their size. However, this exercise changed their thinking pattern.

### B. Rotation and revolution time of each planet and distance of the planets from the sun

The children were asked to collect information from library books, books brought by some children from home, and charts which were displayed in the group on the above. The children took around 90 minutes to complete this work.

The data was put up on the blackboard in a tabular form mentioning the rotation and revolution time taken by each planet. Then the children were asked to observe the pattern, similarities and differences in the time taken to rotate and to revolve. A few hint questions were given to initiate the thinking process (e.g. Which is fastest in rotation? Which is fastest in revolution? Why it is so?) After some discussion all the children understood that the inner planets take less time to revolve than the outer planets because they are closer to the sun. They worked out that the inner planets take more time to rotate because they are solid and made of rock, while the outer planets are made

out of gas. The learning process was an enquiry and thinking based activity. Part of the learning strategy was to not give them direct answers.

### *Reflections by the facilitator*

The group was discussing seasons and what changes we see in nature, experience in the weather and in our mood. Someone said, the trees shed their leaves before winter comes. They cannot make enough food for themselves in less temperature. Whatever food is stored in the tree, the tree uses through the winter. If the leaves will be there they also will be requiring food to survive. By hearing this, T said, "What a great sacrifice by the trees". We diyas found it very touching and appreciated her deep thinking.

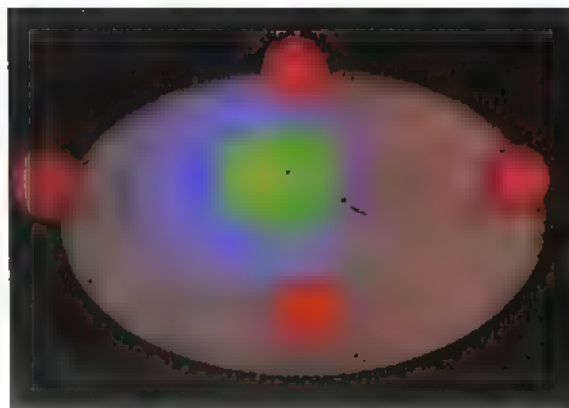
### **Making a drawing**

*The children were asked to draw the sun at the centre and the oval orbit of the earth around the sun. They then drew the earth at four different points on the orbit, showing the correct angle and direction of tilt. They were also asked to write the dates and names of the seasons.*

### **Making a model of Seasons**

The children were made into pairs and given one table tennis sized plastic ball with a LED set inside to function as the Sun, and four table-tennis sized plastic balls to represent Earth. A few nuts and

bolts, straws, and an oval shaped board with holes at the appropriate places were also provided. They were asked to set the Sun and the Earth at each of four positions, and label each with the season and date.





## *Reflections by the facilitator*

It was found that all but one could think hard and figure out why rotation and revolution took more or less time. One child needed very little support, while the rest needed a great amount of hints and probing questions to arrive at the conclusion. However, their reasoning ability was nurtured and they are on the path to progress.

### **C. Inner space and outer space**

The aim of this activity was to make children aware of their inner feelings and relationship with friends and family, whether they accept or reject other ideas and views, how they feel when they are closed and when they are open? Do they have space in their heart for each one in the group?

**Activity:** The children were asked to make two columns with the headings Inner space and Outer space. They were reminded about the inner planets and outer planets. Then they were asked to think of at least one point for each category.

**Process:** Initially, all of them struggled to understand the question. After some time, and being assured that nothing would be wrong and that we would learn from our mistakes, they felt confident enough to write. All wrote something on the lines of 'Jupiter is an outer planet, galaxies are outside our solar system, the planets which are inside the asteroid belt are inner planets.' After some discussion, they came up with the idea of space in our body like stomach, lungs and heart. Then they were given examples — 'When A was presenting, all of you were interfering and not giving him space to speak', 'T got a

lollipop for V', 'K did not allow G to copy her colour pattern'. These clues helped them to think and write about inner space. By the end everyone had written many points.

## *Reflection on inner space by children*

Everyone gives me their space when I go to their home.

I want to give space to my body to grow up.

'A' gives me space and helps me to learn. I am very happy to get a friend like her.

I do not have space for art work (just for example).

I have inner space to help the poor and other people.

I have inner space to trust my friends.

Inner space is a group or a person who keep things to themselves or not

talking or caring for any other person than the ones in the group. This is what people normally do. They should care for everyone and be friends with them.

I want to have space for everybody around me.

I have a large heart to be generous.

I want to have as much space as I have for my brothers and sisters and my relatives and my friends, I should have that much space for rivals.

I want to have space for new people around me.

I want myself to have space to accept my defeat.

I want myself to have space to heal my bad work.

### **D. Seasons**

Demonstration with the Globe

Enough physical space was created in the group to draw the Sun and Earth's orbit.



At the start of the activity, the globe was positioned to correspond with winter in the northern hemisphere. Using a torch, the children's attention was drawn to the angle of the earth's axis and where the light was falling more. The children were told that this happens on 21st December and is called the Winter Solstice. Then the globe was moved a quarter-circle anti-clockwise. The children were guided to observe the earth's tilt and the area on which the sunlight (torchlight) fell. This was Spring in northern hemisphere, and the exact day was 23rd March, called the Spring Equinox. In the same manner the summer and autumn positions of the earth and corresponding dates and names were introduced.

### Writing a poem

**Background:** a few days before, the group listened to songs on planets. They were simple, childlike and easy to understand, with a good sense of rhythm. These songs impacted one child deeply. She wrote a poem about the planets on her own during Diwali break. It was small and simple. Everyone liked it. The poem indicated that she had understood correctly about the planets.

This poem was recalled by the other children and they were then told to make poems to describe each season keeping in mind the following: What kind of fruits are eaten, what kind of clothes are worn, what festivals are celebrated, and the mood and feelings.

### Poem on seasons written by a child

*I am the summer,  
I am the hottest season,  
And I know the reason.  
I have mango, the king of fruits,  
And banyan trees have giant roots.  
I am so hot that you want to dive into  
the pool,  
And you also want to drink something cool.  
You wear shorts, skirts and t-shirts.  
But when you fall, it hurts!  
I have a wonderful fruit – strawberry,  
Raspberry and even blueberry!*

*I am monsoon,  
I will come soon!  
My birthday comes in this season,  
That's why I love this season.  
When I come, it starts raining,  
And you can go out for playing!*

*I am autumn,  
When I come, leaves start to fall,  
Hey! Someone is calling!  
I come when monsoon is ending and  
winter is begging.  
How can I forget about the greatest man*

*Gandhiji's birth day,  
He was a friend of the father of my nanaji.  
You wear full-sleeved t-shirts,  
You can also wear shirts.  
I am the pleasant season too!  
I think it is, what about you?*

*I am winter,  
Out of all the seasons, I am the coldest,  
But I am not the oldest.  
You wear furry jackets and sweat-shirts,  
But you should not wear skirts!  
I have a great holiday Christmas!  
That children like.*

*I am spring,  
When I come you feel fresh,  
You get up, you stretch!  
I have a very colourful festival – Holi.  
I also like to eat guuca moli!  
I come when new leaves come on trees,  
I also come when you get fresh breeze!  
You can wear whatever you want,  
And maybe you can meet a blond!  
I have a juicy fruit, grape,  
And it has a circular shape!*

## *Reflections by the facilitator*

It was observed during the demonstration on how seasons occur, that there were a few children who found it difficult to grasp the concepts. They were mostly kinaesthetic learners who needed hands-on activities to understand. So the activity of drawing and labelling of the position and angle of the earth and their corresponding months were done. There were a few others who had understood but when asked to explain the next day, they were doubtful and less confident. So, just giving information was not enough. Assimilation activities were also

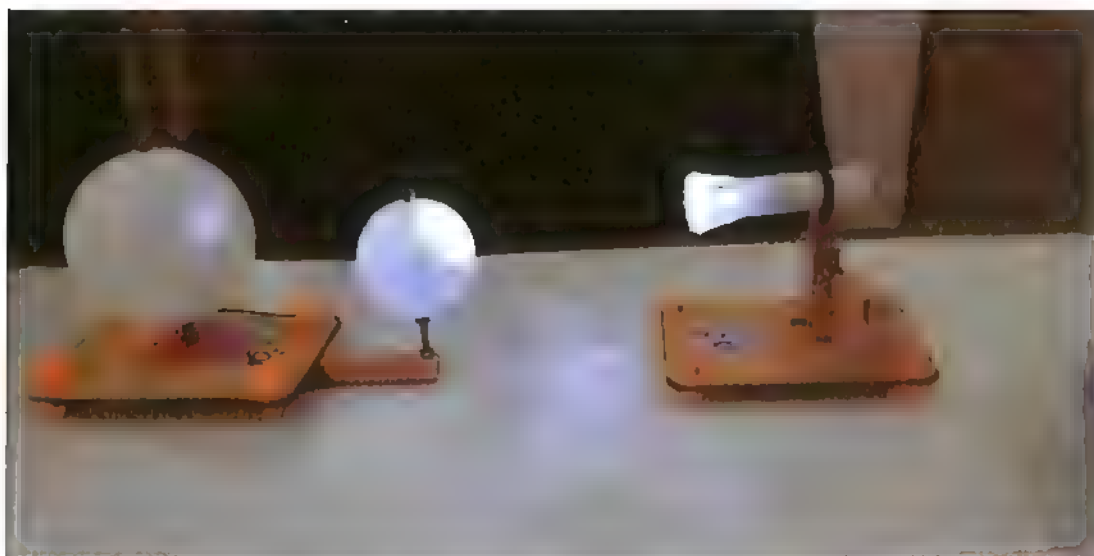
needed. Model making on seasons helped all kinds of learners i.e. visual, auditory as well as kinaesthetic. It also helped them to assimilate the information and explanation given by the Diya. Poem writing helped the children to use their understanding in a context. It also gave the Diya an opportunity to evaluate their learning.

This approach of learning and teaching for the three stages of learning i.e. information gathering, assimilation and utilization or evaluation for the three types of learners were carried out all through the project wherever applicable.

## **Solar and Lunar eclipses**

With the help of the big globe (made by the children), a football, and a big torch light, the eclipses were explained. For better assimilation and understanding of the concept, the next day, the students

were made into subgroups, each given a few plastic balls, a stand, and a torch light. They were asked to make a solar and a lunar eclipse model using those materials.



## Individual research work and making a booklet

The students were asked to choose a small area related to the Universe project. They thought for a while and then chose: Life cycle of a star, Constellation, Galaxies, Comets and Asteroids, Dwarf Planets, International Space Station (ISS), Atmosphere and Core of Earth, and The Life of Neil Armstrong. They studied their respective content, collected detailed information and made a booklet with a lot of drawings. Some children wrote poems about their topics too.

### Model-making on Constellations, Zodiac constellations, Galaxies, Comets, Dwarf Planets, International Space Station (ISS), Moon and Neil Armstrong

The aim was to develop model-making skills i.e. visualising, imagining the final product, creative thinking in using simple and easily available materials, designing and giving proper shape to each part of the model, cutting and fixing each part precisely and accurately, and using appropriate colours to depict the scene. The models helped the children to have better understanding, clarity and in-depth knowledge about their topic. Each child made a model related to their own topic which they chose to study in detail. Some of the pictures of the models are given below.

## Poem on constellation by a child

*My project is about constellations.  
They can be your ideas or  
imagination.*

*You will have to figure out what they  
are.*

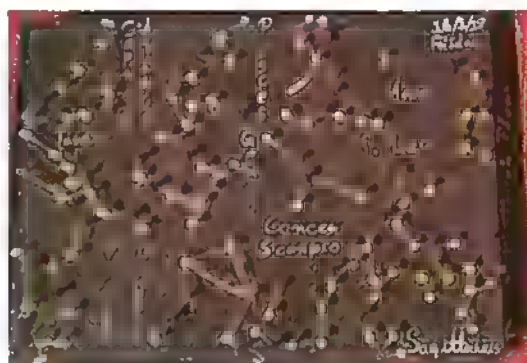
*But you will need help as they are  
very far.*

*They can be mythological creatures,  
With different and unique features.  
The 2nd brightest star is called Beta  
There could be a star called Greta!*

*Draco means dragon  
There could be a constellation  
showing a wagon.*

*Because there is a charioteer  
And I think that's a bit queer  
Thousands of constellations yet  
undiscovered*

*But there are 88 which are covered!*





Model of a dwarf planet



Model of a constellation projected from a cardboard box

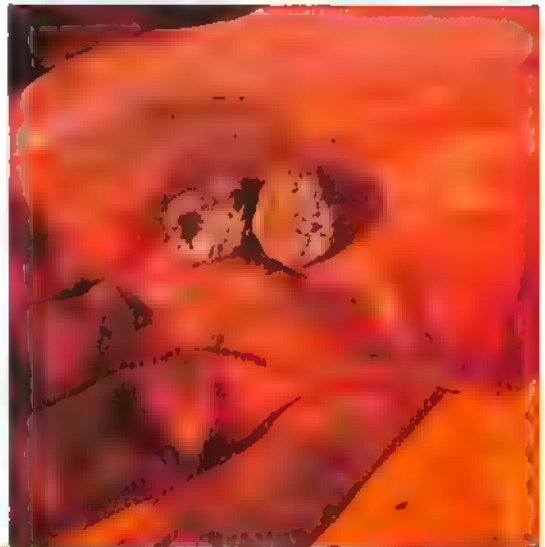
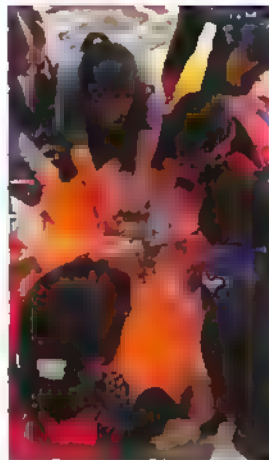


Model of moon and Neil Armstrong



### Making comets using carbon dioxide and soil

The aim of this activity was to through modeling understand the making of comet trails, to experience the sense of touch and smell, and exercise the finger muscles. The children were given semi-powdered carbon dioxide (dry ice) and soil. They were told to make balls out of the mixture. They mixed them wearing gloves for protection. The mixture was not holding together. The dry ice was making everything dry, hence the soil was breaking up. With a lot of difficulty, and the help of added water, the children managed to make a compact shape like a ball. They could see vapour coming out instead of the dry ice melting and producing water. When they ran, holding the dry ice ball up, they could see it leaving behind a faint trail of vapour. This looked like a comet passing the Sun. The group also experimented by putting dry ice into water. This had a dramatic effect, with the water around the ice bubbling noisily as if it were boiling, and emitting lots of vapour, despite being cold to the touch.



## *Reflections by the facilitator*

I had done the same activity 10 years back and did not have an exciting experience. My expectation was not fulfilled. With this group of children, I was very apprehensive about how the children would take it, and what the result would be. Moreover, it was hard and slow work — wearing gloves, opening the dry ice box, taking out ice from the box and experiencing burning sensation, hammering the ice blocks to make powder, mixing with dry mud and not able to make balls because it was getting dried up very fast, then adding water to it, make some kind

of wet ball with ice and finally putting ice pieces into water.

To my surprise, however, the children enjoyed the activity thoroughly. Each one had a thorough experience, especially when one child got the idea of putting the ice in water. When I recall the atmosphere and the environment which was created during this activity, it was full of freedom, no rules, no restrictions. I had never thought of putting dry ice into water and it was that curiosity to observe, and the sense of wonder, which became the centre of learning.

**Note:** The following two activities were not done with this group of children but with previous groups.

### **Night sky watch**

The aim of this activity is to give the children direct experience of looking at the celestial objects and identifying them. This helps them to develop their sense of direction, time and speed. From Delhi one can see our Moon, Venus, Mars, Jupiter and Saturn very clearly with the naked eye and better still with a standard telescope.

### **Visit to planetarium**

A visit to the Nehru planetarium of Delhi gives the children an opportunity to assimilate and correlate what they have been studying and learning in school. The exhibition and film shows enrich their understanding of the universe.

### **Means of evaluation**

#### **Presentation**

Oral: The children presented their topics (mentioned above) with the help of their booklet and models. Since they used models to explain the concepts, the audience was more involved and attentive. This helped them in understanding and grasping critical aspects. Everyone could see clearly in miniature what was up there in the sky in front of them, especially the constellations and International Space Station. The presenters were confident in answering all kinds of questions, and this showed the depth of their knowledge. All other means of evaluation mentioned in the previous chapter 'India' —

observation, peer evaluation, constant guidance by the facilitator and self-evaluation by the children — were also used in this project.

### **Evaluation**

All children have understood the concept of inner and outer planets, how seasons occur, and reasons for solar and lunar eclipses. Around 60 % of the children could calculate the time taken for light rays to travel from the Sun to Venus and Earth. The concept of gravity and mass is understood by most children, based on the documentary series "Voyage to the Planets". The use of Earth's atmosphere, its layers and depth was comprehended. There was a clarification of the children's idea that our earth was warm because of the heat at its core. They understood that the earth was cooling and expanding. Children were motivated by the life of Kalpana Chawla and other astronauts, and their preparation and work in the International Space Station. They are motivated and inspired to study further. Watching the documentary movie gave the students a sense of the vastness of the universe, risk to life in space, and the experience of landing on Venus and Mars.

This also stimulated their thinking process of how the gravitational force and Earth's atmosphere are crucial.

Making models on seasons and eclipses developed their technical thinking ability, problem solving skills and hand skills. Mathematical skills of computation were emphasised while calculating distance of the planets, and creativity in language was seen while writing poems on seasons.

The psychic aims were, to admire the vastness of the universe, to learn to accept everyone with their strengths and weakness and to learn to become receptive and fearless in order to accept one's own shortcomings.

All of the above aims were achieved to a great extent. Each child was mesmerized by thinking and imagining how big our universe is and how small and tiny we are in comparison to the whole universe. The children also became brave to accept their shortcomings and appreciated critical feedback from their peers. They began to recognise each other's potential and could seek and extend help when needed, which was not the case before the project.

### *Self-reflection by children*

#### **AO reflected:**

My improvements: I improved my English speaking, neatness in my file work, writing in more detail and hand writing. What did I learn: life cycle of a star, names of objects in space, how to make a comet using dry ice, information about planets. What did I enjoy during this project: making comet, watching the sun from the sun glass, project on stars, watching the video on planets. What can I improve: handwriting, more detailed study, presenting my topic in a more detailed manner.

#### **AS reflected:**

I learnt how to make impossible things into possible things. I learnt how to make models without help and explain easily. I understood how far the planets are from the sun after solar walk. I learnt very interesting thing that was how to make comet with carbon dioxide ice and that was my first experience. It was a wonderful experience for me. I want to improve in my original writing and not to copy.

### *Reflections by the facilitator*

This group of 9 children are a mixture of a variety of learners, talents and abilities. Their levels of abstract understanding, socialization and adjustment skills and physical skills differed from one another. The work of the Diya was to help the individuals develop their talents further and help them improve in areas they were lagging. There were children, who were called 'gyani' (intelligent) by the Diya, who helped the understanding of others and helped in clarifying doubts, especially during the concept explanation of seasons, gravity, rotation, revolution, inner and outer planets and eclipses. There was a child who was called 'dictionary' by the Diya who helped in correcting spellings of her friends, especially correcting their drafts before writing

in the final project booklet. Yet there were children who were physically skilful. They helped in making and constructing models. It was also observed that a few children did not like to work with a few other children. They preferred to be working with their close friends. The activity of inner and outer space helped to dissolve their rigidity and come out of their comfort zones. While making models, they were paired. Initially some resisted but gradually they took it easy. All the children worked together in harmony and cooperated with each other during the activity of making comets. As a whole, the group is becoming aware of each other's strength and there is an appreciation and respect towards those qualities.



## **Psychic Education**

A few simple words of advice may be useful to one who has resolved to undertake it (psychic education).

The first and perhaps the most important point is that the mind is incapable of judging spiritual things. All those who have written on this subject have said so; but very few are those who have put it into practice. And yet, in order to proceed on the path, it is absolutely indispensable to abstain from all mental opinion and reaction.

Give up all personal seeking for comfort, satisfaction, enjoyment or happiness. Be only a burning fire for progress, take whatever comes to you as an aid to your progress and immediately make whatever progress is required.

Try to take pleasure in all you do, but never do anything for the sake of pleasure.

Never get excited, nervous or agitated. Remain perfectly calm in the face of all circumstances. And yet be always alert to discover what progress you still have to make and lose no time in making it.

Never take physical happenings at their face value. They are always a clumsy attempt to express something else, the true thing which escapes our superficial understanding. Never complain of the behaviour of anyone, unless you have the power to change in his nature what makes him act in this way; and if you have the power, change him instead of complaining.

Whatever you do, never forget the goal which you have set before you. There is nothing great or small once you have set out on this great discovery; all things are equally important and can either hasten or delay its success. Thus before you eat, concentrate a few seconds in the aspiration that the food you are about to eat may bring your body the substance it needs to serve as a solid basis for your effort towards the great discovery, and give it the energy for persistence and perseverance in the effort.

Before you go to sleep, concentrate a few seconds in the aspiration that the sleep may restore your fatigued nerves, bring calm and quietness to your brain so that on waking you may, with renewed vigour, begin again your journey on the path of the great discovery.

Before you act, concentrate in the will that your action may help or at least in no way hinder your march forward towards the great discovery.

When you speak, before the words come out of your mouth, concentrate just long enough to check your words and allow only those that are absolutely necessary to pass, only those that are not in any way harmful to your progress on the path of the great discovery.

To sum up, never forget the purpose and goal of your life.

The Mother, CWM, Vol. 12, p. 33

# Weather and Climate of the Earth

## PART 1

### The beginning

*The project, 'Weather and Climate of the Earth' was a sequel to the study of the environment for this age group. It started in the beginning of the year after noticing children's interest in nature and environment, drawing trees and plants and their curiosity about natural things. This topic was an extension of the study of trees, plants and nature in which the adaptation of plants and animals had been discussed. It had become clear to the children that the environment was controlled a lot by the climate of a place for growth and development of living things; be it vegetation, animals or people. So the elements of weather and the links to latitude were the logical sequence to follow up on through this new project.*

*The topic was carried out in two parts. The concepts were distributed equally into two parts; in the first part temperature was taken up in detail and the second part entailed air pressure, wind and rainfall. There was a thrust on application by way of making models and slide presentations on climate where the assimilation and evaluation activities were inbuilt. In this integrated topic, several disciplines were interrelated and intertwined. It sustained and nourished the children's interest and learning about their surroundings.*

What were the key features of this project?

## Aims

The project outline was delineated keeping several aspects in mind.

1. To relate the topic to their lives bringing awareness of changing weather and how life adapts to the changing climate.
2. To integrate science, social science, mathematics and language to express their views and perceptions clearly, supported by evidence.
3. To construct knowledge through observation of vital life forces, the elements in the physical surrounding and its influences on life.
4. To understand the elements and forces that impact their life supported with requisite skills, and concepts, through inquiry based models.
5. To work independently with an emphasis on decision making, reasoning and hypothesising, interpreting, inferring and concluding from facts and experiences.

*The 3 principles of True teaching – 'Nothing can be taught', 'Mind has to be consulted in its own growth' and 'Near to far', were integral to the process to understand the concepts and to elicit the students' perception and views regarding their experiences and document them.*

*What were the group needs and how were these covered in the project?*  
The group needed to learn to work independently and responsibly to make them study better. They also needed to

read and understand and not have everything explained to them. The children needed to keep records and share their information and build on group coordination.

## 1. Project : Weather

### Objectives for Physical Development

1. To observe and measure the changes in the physical surroundings i.e. of temperature, rainfall.
2. To express weather and climate through drawing diagrams and charts.
3. To collect data accurately and make neat, clean models and diagrams showing details.

### Objectives for Vital Development

1. To enjoy the change in weather and know that it brings different moods.
2. To nurture gratitude for the elements of weather like water, wind and sunshine for making our Earth liveable.

### Objectives for Mental Development

1. To become aware of the changing climate and the weather in our lives.
2. To identify and understand the various factors affecting weather and climate of the world.
3. To record the data collected from experience and observation.
4. To develop clarity in expression, reasoning, inferring and deducing.

### Objectives for Psychic Development

To appreciate the beauty and uniqueness of all the weather conditions and feelings they evoke in us, including the sense of Gratitude.

**Resources and Group Environment:**  
(How the group is set up to help with implementing the project successfully)

1. Resources from library: Books, Reference books, Key words
2. Computers to feed in data collected from various sources, skills learned for power-point presentation, Tux typing and Internet facilities to browse for information.
3. Resources collected from nature, daily experiences and day to day observation was emphasized.
4. In addition to this, equipments like the thermometers – clinical and room, wet and dry thermometers, and barometers were made available for children's exploration and acquisition of reading and measuring skills and to make comparisons and inferences thereafter.

**Key words in the Project:** Weather, adaptation, wildlife, factors influencing weather; temperature, altitude, wind, precipitation, ocean currents, climatic regions, temperature zones, thermometer, latitudes and longitudes.

**Worksheets:** Questions and answers and reading paragraphs on related topics were provided.

**Books used:**

1. Changing world
2. Physical Geography text book of NCERT for class 6 and 10.

Materials for making the instruments were collected, some by the children and a few were provided. Decisions for the materials to be used were discussed and taken by children. The weather instruments were put up within easy

## Activities

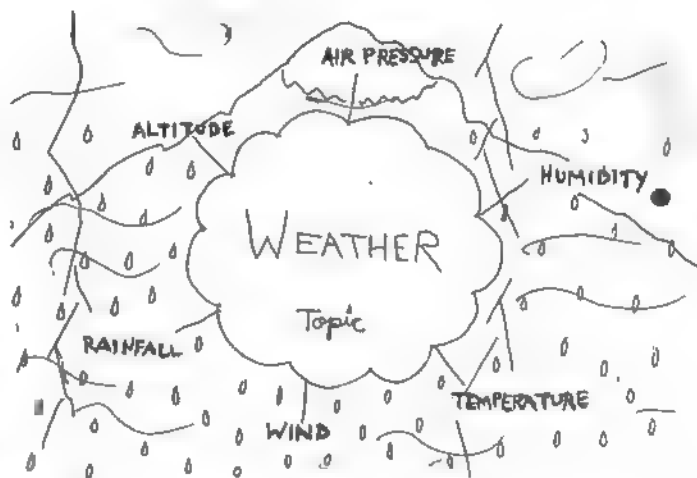
### Brainstorming

A circle was drawn on the board with few lines pointing on different direction.

The students were asked a few questions as a starter:

- a) What do you understand by the term 'weather'?
- b) Which time of the year do we drink coconut water, soup, hot drinks and eat ice-cream?
- c) When do we wear jackets/sweaters/cotton clothes?
- d) What are the factors responsible for all these changes?

The resultant discussion led onto the following responses from the children; temperature, heat and cold, rainfall, altitude, and sea level. Pointers like why is it always cold on the mountain peaks and hot near the sea? Does blowing of wind have anything to do with weather? The lines of the circle were filled up as per their responses. – Temperature, Rainfall, Altitude, Wind. Humidity was added later.





reach. Maps and Internet facility were provided.

## Part 1

### Temperature

Following the third principle of True teaching, 'Near to Far' we started with Temperature. The first principle 'Nothing can be taught' came to the fore as the children were led to observe, deduce, infer from their experience and conclude from what had been experienced and observed from the surrounding. The phenomena were discussed, questioned and reasons/hypothesis elicited from their experience with no or little explanation offered so as to help them develop their own thought and look at the principles involved therein. The activities revolved around body temperature, moving to room temperature, air temperature and finally to the earth's temperature zones. An attempt was made to gather information from observing the physical surroundings and deriving conclusions from the objects and environment.

### Discussing Temperature

The first component of weather was temperature. The topic was initiated by drawing the attention of the children towards observing the clothes we were wearing and simultaneously asking for the fans to be switched on. The discussion revolved around a child who throughout the year walks barefoot, wearing only a T- shirt.

What is it that makes us feel comfortable or uncomfortable during different times of the year? Why do we feel hot or cold? The children pondered over the situations and responded with hot, cold, weather, and temperature. The discussion led us to more probing questions such as why do

we all not feel the same hotness or coldness? How do we measure temperature? Children were asked to frame questions and the questions were compiled into a question bank. They were encouraged to look for answers from various sources. Thus, the process of inquiry began with children searching for the answers to their questions.

The questions raised were to stimulate their mind and the thinking process and to draw their attention to the common natural phenomena and the factors influencing them;

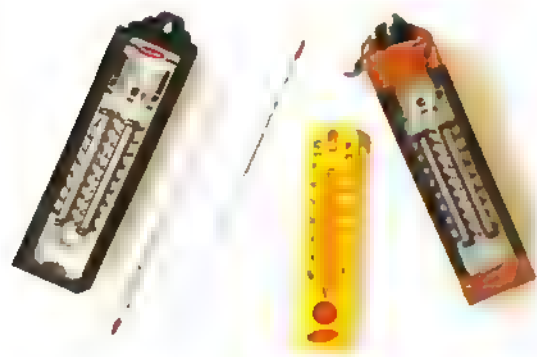
1. *What is temperature?*
2. *Why do we measure temperature?*
3. *In how many different ways can we measure temperature?*
4. *Why do we use a thermometer? What does it indicate?*
5. *What is the (SI, Standard Index) unit to measure temperature?*
6. *What is the relationship between temperature and pressure?*
7. *Why is the sea/ocean cooler than the land masses?*
8. *Why is the mountain top colder than the plain field?*
9. *Why are the North Pole and the South Pole colder than the equator?*

Some of the questions raised by the children were based on their previous learning and understanding of the environment. They pooled their own resources and ideas, referred to the library and discussed among themselves to search for the answers, guided by Diyas.

### Displaying Thermometers

Children brought thermometers from home, the health centre and the Science lab and they observed their shape, size

and uses. The thermometers were displayed and the name, function and uses of wet and dry thermometer, maximum and minimum thermometer, clinical, digital and lab or alcohol thermometer were mentioned.



Six's Maximum Minimum Thermometer

### *Diya's reflections*

All the children were familiar with clinical thermometer and its use as they have seen them at home. After the walk and observing the thermometers the children concluded that clinical thermometer is used for body temperature, alcohol or lab/wet and dry bulb thermometer to measure room and air temperature. Now-a-days digital thermometers are also used.

This activity aimed at developing children's observation skill with reasoning, aroused a lot of curiosity and interest. All were keen to read the temperature and started comparing different features of the thermometers. Once again it proved that real objects could raise more interest than book information.

Their questions related to other thermometers were addressed and a walk was undertaken to identify thermometers placed at different locations in the ashram for various purposes and their readings were noted.

### **Reading a Thermometer**

Exercises on reading a thermometer and calibrating it were taken up in steps.

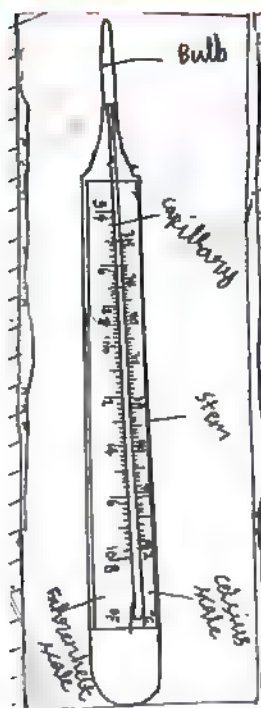
1. Observe the mercury level in the clinical thermometer.
2. Bring it to zero degree by shaking 3 times.
3. Rub your hands till it is warm.
4. Hold the thermometer and after 30 seconds read the temperature. This will give you normal body temperature. Most found it would be 97+ degrees. One child stated it is 98+.

Information collected through direct experiences had a profound impact on the children. The learning is for life as they can apply the learning whenever needed. To have more clarity and in-depth understanding, we moved to the next activity.

After observing the normal body temperature, questions were raised about the graduation scale, how mercury column rises and falls, why it stays in the bulb and so on, leading us to:

### **Drawing and Labelling of the Thermometer**

Children chose one thermometer to draw showing various parts; bulb, constriction at the tip, the stem, column of mercury, the capillary tube where mercury column rises, the scale and expansion chamber – where air is present that pushes back the mercury.



A lively discussion followed on how the temperature rises and falls in the thermometer.

All wanted to know why, after the temperature falls, the mercury does not go back into the bulb. This led to the discussion on the use of metal in the thermometer and their properties; alcohol and mercury, their melting and freezing points

and why they are safe to use and also that it was within the range of human body temperature; why other metals or non-metals cannot be used and how sensitive they were to heat and the detail of the graduation scale.

### Diya's reflections

Through these activities children gathered information about temperature, thermometer and about measurement. Their construction of knowledge and forming views were based on direct observation and handling of the apparatus. Handling of apparatus helped in in-depth learning.

### Measuring body temperature

Three points in the body were chosen: under the tongue, under the armpit and at the fold of the knee joint. The thermometer was used to measure the temperature in their body for 1 minute

each. Students then noted and tabulated the temperature measurements.

The recording of temperature was shared and it was found out that 'R' had the highest body temperature in the group as is shown consistently in his record; in most cases the temperature in 2 points were the same and the 3rd point differed. In the case of one child, the temperature remained the same throughout.

### Measuring body temperature

After doing different kinds of activities, such as resting, sitting for 10 minutes, walking leisurely for 5 minutes along the corridor and jumping 20 times. The temperature was noted and recorded. It was found that the body temperature was more while resting than after walking and running. However, the temperature was high after jumping. This anomaly was ascribed to sweating and perspiration that cools the temperature and therefore resting temperature was higher. It was also noted that human error and faulty thermometers could alter accuracy of readings.

CHANGES IN MY BODY TEMPERATURE AFTER DOING THESE:  
(On: 30/12/2018)

No.	Activities	Fahrenheit	Celsius
1)	Resting	98.1°F	36.7°C
2)	After Walking	98°F	36.5°C
3)	After Running	97.4°F	36.3°C
4)	After Jumping	98.2°F	36.8°C

### Diya's reflections

Measuring ambient temperatures were assimilative in nature and designed to help children practice the information they had gathered so as to retain their learning and come to a conclusion by observing and from experience.



### Measuring room temperature with alcohol and maximum-minimum thermometers

In pairs, children chose five different places on the first floor and on the ground floor – sunny spot and dark spots, dry and wet spots and placed the thermometers in the spots. They recorded the temperature in different parts of the building so as to compare the changes over time and across locations. Recording was done 3 times a day; at 9 am, 12 o'clock and 2.30 pm. The factors affecting temperature of a place were then examined by the children.

This activity went on for two months. The activity continued with other features of weather, such as wind and rainfall. The objective of this activity was to help them choose the places, take a few important decisions about location of the thermometer, such as ease of reading, visibility and access, and safety. The children helped each other and shared their results and tallied them. Any difference in temperature reading was voiced and possible reasons offered. Initially the children did descriptive recording and later changed it to a tabular chart when they learned to tabulate data.

### Drawing the Graph

The data on temperature was collected, collated and analysed by the children under guidance. Each child drew a line

graph based on temperature readings for ten days, understanding the parameters involved. They drew graphs after analysing the information.

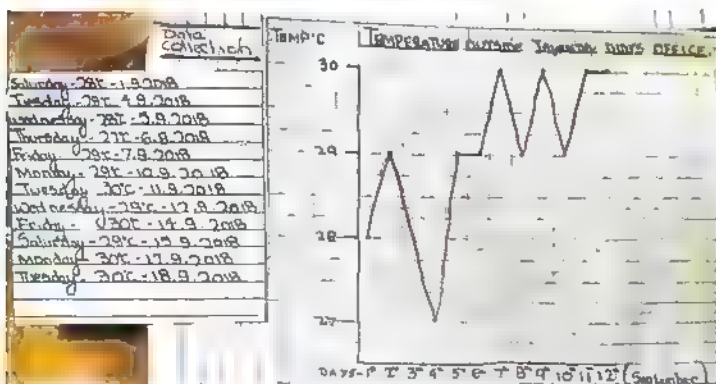
### Labelling the Earth's Grid - latitude and longitude

This started as a math based activity. After brainstorming on the Earth's surface, children drew, named and labelled the Earth's grid; latitudes and longitudes. Drawing of latitudes like equator, tropic of Cancer and Capricorn and the Polar areas and latitude for India and longitude showing Standard Meridian and International Date Line, and Central Longitude for India was carried out.

The children drew circles using a compass with different radii. The following skills were introduced in the process:

1. Using a compass to draw circles of various radii.
2. Learning key vocabulary such as radius, diameter, circumference and their relationship.
3. Measuring radius, diameter, calculating circumference.
4. Drawing parallel lines and perpendicular lines.

After becoming familiar with the terminology, they drew the Earth's grid and consulted the dictionary for the meaning.



### Mapping Earth's Temperature zone

After a brief discussion on latitude, longitude, held together with why certain latitudes are important and what they represent, drawing of the earth's temperature zone was undertaken with a few pointers:



1. Show Earth's grid mentioning the latitudes
2. Show the temperature zones
  - 1.1. Torrid zone (Tropical)
  - 1.2. Temperate zone
  - 1.3. Frigid Zone (Polar)
2. Find out the relationship between the heat zones and the latitude.
3. Examples from children travelling to various countries in different latitude were gathered emphasising on the dress they wore as per the temperature of the place. This enabled them to relate to the temperature and latitude of a place.
4. Later three exercises were given:
  - i. Name a few countries on particular latitude.
  - ii. Find out the latitude of the listed countries referring only to the atlas.

**An assimilative and application oriented activity was designed to understand the use of latitude and longitude to find the location of a place or climatic region. It involved**

1. Naming and locating major latitudes and longitudes on the Earth's grid.
2. Finding latitude and longitude of different places.

One of the aims of the above two activities was learning to use the atlas and becoming familiar with different features it offered. Children learned to find, locate places and interpret maps from the Atlas. They played a few map pointing games to locate the countries they had visited with family, estimate the distance travelled from India and the route followed. For example it is 80 degree north and 50 degree east.

- o Name the country or ocean whose latitude and longitude are 110 and 75.
- o How far is it from GMT?



**Colouring of Earth's temperature zone mentioning the latitude.**

This activity was thought provoking. While deciding on the colour, one child mentioned that 'I am colouring the equator red as it is the hottest one'. Some coloured, highlighting the different zones distinctively. The coloured drawings were pleasant and appealing.

**Reading on latitude and longitude and doing exercise**

In this activity, students gave a title to each paragraph, chose the correct heading from multiple statements, wrote the main idea of the paragraph, and did comprehension exercises.

Learning about three different temperature zones, Tropical, Temperate and Frigid zones were informative and interesting through these exercises. Drawing a diagram and colouring the Earth's temperature zone was enjoyable.

**Measuring water temperature**

Students measured the temperatures of tap water, cold water, and boiling water for 5 minutes. They did these measurements every five minutes for twenty minutes in each tube and

documented the same. The readings showed the rate of change in temperature till it became normal. The experiment gave them interesting opportunities to observe, estimate, and predict.

### Insulating temperature

Different materials such as corrugated sheets, cotton sheets, and woollen materials to cover the glass containing water to observe how long it remains hot. The degree of hotness was also measured.

### Making a working model and giving reason for how it works

Children made an instrument to measure pressure. The instrument contained a water bowl. One day it was observed that the water in the bottle had risen considerably. They were asked for a possible reason. As they were recording the temperature those days, they reasoned that the temperature was cold, and so the water has gone up. This experiment and observation led to the conclusion that there is a relationship between temperature and air pressure. They are inversely proportional to each other, that is, when temperature falls the pressure goes up subsequently, leading to an activity on air pressure and wind.

### Game

Dumb Charade on words from Temperature, Thermometer was played for 45 minutes and then was stretched to 1 and 1/2 hour.

The activities on temperature and latitude were designed in a way that the children can collect information from other sources without depending on print information alone. Each activity had ample opportunities to assimilate the information gathered. Examples and discussions were held and substantiated by real life experiences.

### Activity based on Evaluation

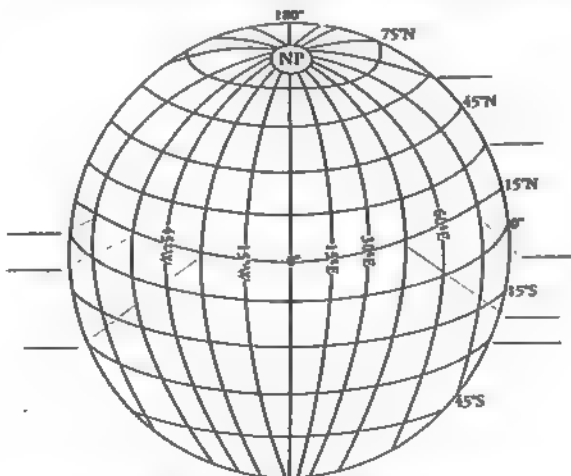
1. Drawing of thermometer and labelling various parts.
2. Explaining the process of measuring the room temperature to children of another group.

### Evaluation Worksheet on Weather

A worksheet was prepared which had objective, short and long questions and drawing and labelling Earth's temperature zones to assess their understanding.

#### 6. Diagram-based questions.

- a. Complete the numbering of the latitudes and longitudes in the given diagram.



- b. On an outline map of India, draw the Tropic of Cancer and the Standard Meridian of India. Name two places in India which will have local time ahead of Indian Standard Time.
- c. Draw a globe showing the 23½°N and 23½°S.
- d. Draw a globe to show the Prime Meridian and Equator. Indicate the direction of rotation with an arrow.
- e. Draw a diagram to show the thermal zones of the Earth.

# Weather and Climate of the Earth

Wind, Air pressure and rainfall

PART 2

## The beginning

*As the topic unfolded, other components that affect the weather such as wind speed, direction and its impact on living beings, and air pressure and its relationship with rainfall came to the fore. Each of the components was introduced with relevant activities and the underlying principles were discussed. Part 2 of the weather project primarily emphasized on application of understanding about weather through model making. For example, students made instruments to measure temperature, pressure, humidity, rainfall, wind speed and direction. An in-depth work on climate and its impact on life, animal, flora and fauna, habitation and adaptation were done and presented through slides. The vital and psychic aim impacted the student's thought while working on the slide presentation.*

## Aims

- To understand, assimilate and apply the concepts and principles learnt.
- To develop eye-hand coordination skills, designing and implementing ideas.
- To make models based on topics under study and principles learnt.
- To prepare slides and make a presentation on the impact of climate on animals, plants, regions and on lives.

## Wind

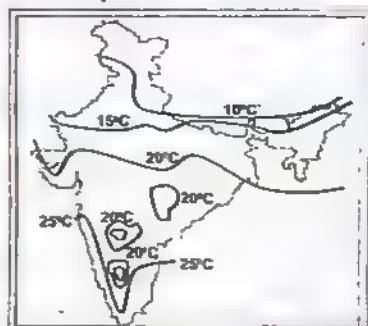
1. An experiment to find out where the smoke of lighted incense stick drifts. All students were provided with a lighted incense stick and asked to note
  - a. The direction in which the smoke is drifting; horizontal or vertical
  - b. The movement of the smoke in different places of the building
  - c. Inside closed space and outside the school in an open place.

The observations pointed out that hot air rises up. It also depends on the direction from where the wind is blowing. This led to learning about:

**Wind and its causes:** Identifying Types of Wind - easterlies, westerlies, trade winds, comparing periodic and permanent wind systems, principles of air movement – hot air rises up, formation of low and high air pressure, effect of heat on air and weather, conduction, convection and radiation. The concepts were placed before the children through demonstration, experiments on conduction, convection and drawing diagrams and exercises on formation of low and high pressure.

## TEMPERATURE- JANUARY

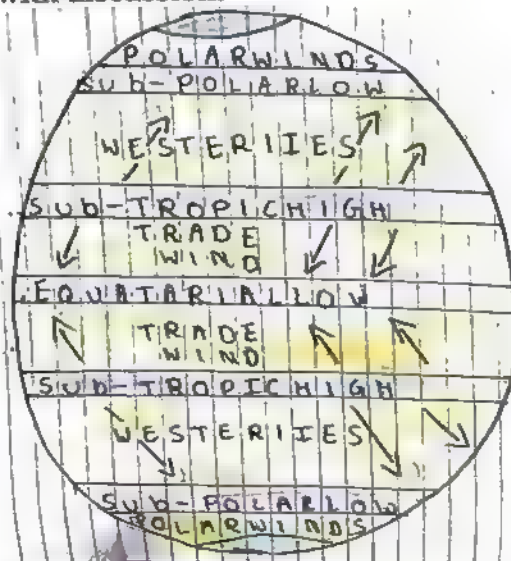
TEMPERATURE IN INDIA



Isobar

It was noted that students took keen interest whenever the concepts were presented through diagrams, interpreting pictures besides discussions. The students worked at their own pace to complete the assignments at different times. They helped and discussed with one another, clarifying their doubts.

**Drawing and Labeling Diagrams on the planetary wind system, temperature and rainfall distribution in India was done with discussion.**



**Stages in the formation of cyclones, tornado, and hurricane**  
Their differences were explained through



questions. Video clippings of the different features were presented. The children were asked to write a paragraph on the impact of these natural phenomena on people, place and land.

The objective was to sensitise the children to the destructive effects of weather and suggestions evoked on how to deal with them. The students were also encouraged to list the name of the countries facing such features regularly and suggest preventive measures taken by the governments and people. It was noted that initially the students were overwhelmed by the sheer force of the wind power. Being at a distance from the affected place, they observed and commented. However, a few discussed about the difficulties faced by the people and talked about how these elements could be controlled. Others were able to generalise by recalling cyclonic weather conditions in Delhi which caused severe damage. Video clips of the cyclone sweeping through some parts of Asia at the time of the study opened the eyes of the children to the might of some cyclones and the destruction they can actually bring within a short period of time.

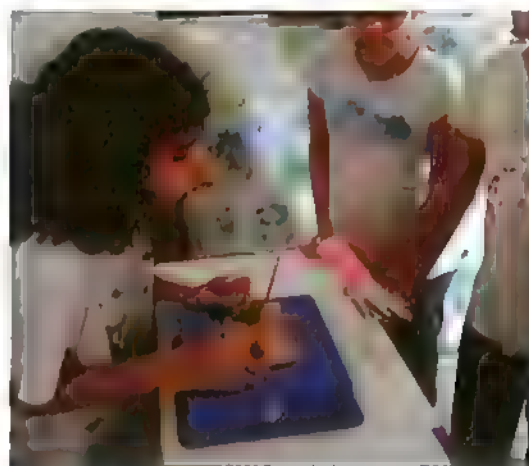
### **Making models on wind force, wind speed and wind direction**

A wind vane, windsock and anemometer using local material. The purpose was to quantify the direction and speed of wind to measure its effect. To this was added the observation on cloudiness and sunny days.

Students were asked to choose any one aspect of the wind power and make a model. Two children decided to work independently while others worked in pairs. The children pooled all their resources, knowledge, learning and skills

together and applied them to making models.

**1. Windsock:** The child decided to work independently, collecting resources and deciding on the type of materials on her own. Her idea emerged from working on the Trade wind and the sailors' dependence on it. Initially, she made a boat of bamboo, learnt to cut the bamboo, made a sail and completed her model. However the boat remained tilted. She then changed her model and worked on a windsock, a replica of which is found and used in airports to note the direction in which wind is blowing. She was interested in making a model that aided sailors and pilots. She studied the process minutely



to make the model. She explained the entire process in steps and demonstrated the working model successfully to others.

**2. Wind Speed – Anemometer:** The child got interested in finding out the wind direction and the speed at which it moves. Prior to making the model, she learned about the Beaufort scale measuring wind speed and studied the effect of the gales and breezes through cartoons. She got enthused with the measurement scale and decided to work on the criteria to measure properly. She

collected readily available local materials such as a protractor – D', thread, ruler and iron stand with clamps and assembled her model. She found out that the thread was too long to give accurate measurement. After trial and error, she got the model to work accurately. The child chose to work independently and worked with confidence. "Model making was interesting. For the first time we made a model related to the topic. This is my work and i will work alone. I can do it." She was pleased with her model.

Both the children displayed self-confidence and will power to make their model functional.

3. Wind Vane: Ice-cream cups, paper coaster, long needle and ice cream sticks were collected to make this contraption. A few trials to fix the centre pole and the arrows showing directions to rotate was undertaken. Ideas for modification of the model came from them. The wind vane was labelled and it worked showing the wind direction.



Wind Vane



Wind speed

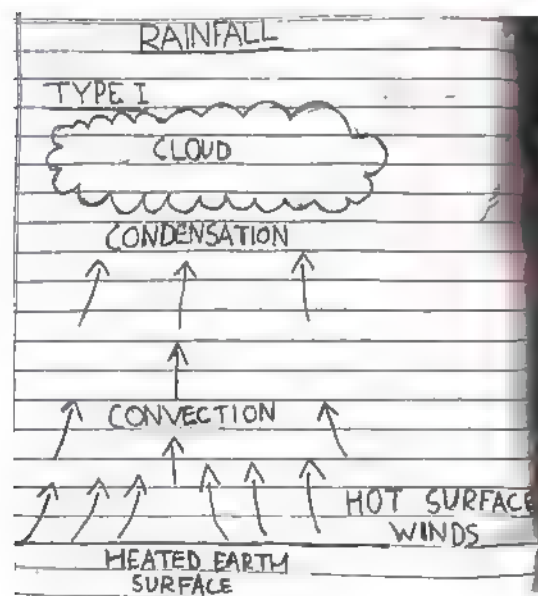
### *Diya's reflections*

The making of the models was a challenge. Firstly to make them functional, secondly it gave vent to their creative urge; thirdly, the success of the working model boosted their self confidence as seen in their interest and initiative in making more models. The children recognised one another's strength and distributed the work accordingly among themselves. Though the circular model included placing four cups on a paper plate to show the four directions and arrows drawn to show the direction in which the wind is moving, the model due to the weight of the cups, tilted. Yet the children refused any help from others and tried to modify the contraption. This new found confidence and belief in their own skills and idea was highly appreciated.

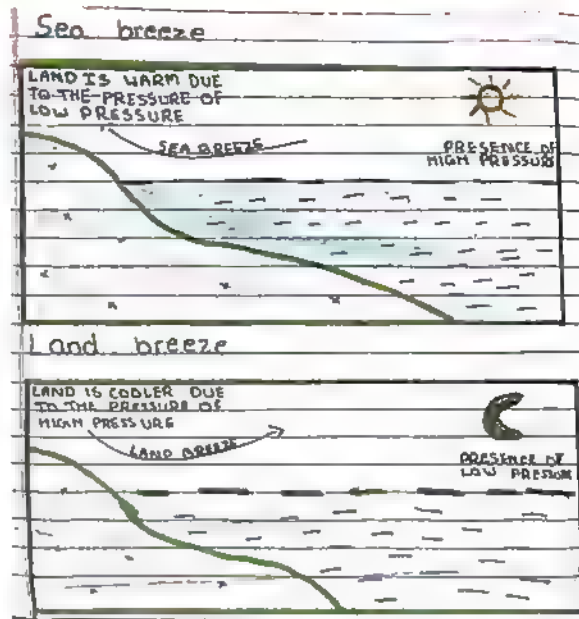
When asked what was the most interesting activity in weather topic the reply was, "We could make a working model related to the topic and I was happy to see it working." The model lacked aesthetic perfection but worked well. It was of immense satisfaction and pride to the child as he created it from scratch: starting from the idea, its refinement and eventual implementation.

## Rainfall and water currents

1. Map pointing: Show on the world map warm and cold Ocean currents and climate. This map was used to interpret how currents affect the climate on land.
2. Understanding the influence of ocean currents and their movements in the northern and southern hemispheres.



3. Giving reasons for the formation of different types of rainfall. Information on types of rainfall included; monsoon carried by change in wind direction, convection current, relief rainfall and local rainfall.



This information on types of rainfall was new to them. It made them aware of the cause and effect of rainfall. Observing different cloud shapes delighted them and also made them more aware about the environment. How rainfall changes the moods of the peacock, birds and animals were discussed in detail.

4. Measuring rainfall with the help of rain gauge. A rain gauge was used to measure the rainfall for a day. This was a group activity lead by a question, 'how the weatherman measures rainfall?' To investigate, a rain gauge was set up by cutting a bottle near the mouth and placing a funnel inversely on it. A ruler was taped at one side of the bottle and placed on the terrace at an open place for 24 hours. The rain collected was measured the next day and a fresh bottle was kept. The measurement was recorded on their weather chart.

Making and maintaining a chart was a pleasurable activity for all. They worked on it diligently. Initially the children recorded the data in paragraphs and later switched to tabular charts. What



interested them most was instant observation and recording them as data; the result was immediate. This motivated them to accurately observe and any anomaly was immediately brought to notice with possible solutions.

**4. Hydrometer:** This model showcased the relationship between temperature and pressure. Water was kept in a bowl and a graduated/scaled empty bottle was inverted over it. When the outside pressure was high, the water was in the bowl. When outside pressure was low, the water rose up in the bottle. The low and high pressure formed due to fluctuations of temperature showed that pressure is inversely proportional to temperature.



The children named the instrument, 'Hydrometer' as it contained water ('Hydro' meaning water). This working model generated a lot of interest among onlookers. The concept was well presented through the model and explained the relationship well.

**5. Hygrometer:** Children were thinking about how to measure the humidity after learning about formation of low and high pressure. They pooled their ideas

together, designed a lay out of the model and proceeded to assemble the various parts. Putting the balloon in its place proved difficult as it had to be handled with care. After bursting a few, they finally managed to place it. The contraption worked well and demonstrations were held. The explanation was simple and clear.

**6. Evaluation activity:** The children collected waste and local materials to make the instruments. Each instrument was prepared and calibrated. They chose a place to keep the instrument so as to be able to collect data easily. Since all were working models and results were instantly showed, all were happy and took pride in showing them to others. The working models were evaluated in terms of resources, use of local waste material, aesthetics and perfection level, working condition of the model, understanding and clarity in explanation, self confidence and pride in the process.

### Climate

After exploring the various facets of weather we proceeded to long time weather condition of the world. Maps, diagrams, interpretation of temperature and rainfall map on the atlas were referred to with drawing of isobar and other maps to work on the following aspects:

1. To understand the climate of India - recording temperature, winds speed and humidity over a long period.
2. To develop and infer how climatic elements influence the different climates of the world.
3. To relate the effect of wind, temperature, tree cover on pollution reduction and change.



4. To define ecological spaces and terms (living and non-living) and positions and roles and eventually appreciate the interconnectedness of living organisms as well as between living organisms and the non-living environment.
5. To choose world climate type in different latitude and countries. Children were provided with a list of climatic region and asked to do a) research on them, and b) make slide presentation in the computer.

The list includes:

1. Sahara Desert (desert tropical)
2. Atacama Desert (desert temperate)
3. Brazil (tropical wet/dry)
4. Tropical Monsoon (India)
5. Temperate cool wet England (west and east coast)
6. Polar region (Siberia)

The Power Point presentation for these climates was done on the following pointers

1. Location on world map
2. Temperature and rainfall conditions and seasonal changes
3. Adaptation of Plants
4. Adaptations of Animals and Birds
5. Human activity

Computer learning: The children learnt how to make the transition of the slides, make the content relevant and introduce different slides and layout with pictures and information.

Slide presentation was the highlight and the conclusion of the project as there was peer evaluation by having all the other student seeing the slides and answering the questions that were given. These questions were made by the children for

## SAHARA DESERT WATER AND LAND

People think that the desert is flat. Some deserts are flat, but most of the deserts are rocky, with mountains.

- Some water gets trapped by the mountain peaks, and it travels hundreds of miles underground: in some it comes out of the Earth in springs, that is called an oasis. People reach the rest of the water by digging wells, below the mountain.



**Q 12: Ganga plain**

How many seasons are there?  
 Tell one common tree except banyan.  
 Tell one type of farming.  
 When do the most heavy rains come?  
 There are \_\_\_\_ wildlife sanctuaries in India.  
 How many species of mammals known from India?  
 What is the season of rapid plant growth?  
 What is the highest temp in India?  
 What is the average rainfall?  
 Where do the jet streams blow?  
 Which tree is the shortest?  
 Which tree is the tallest?

## PLANTS ADAPTATION

- Trees and plants have a special adaptation to survive in this climate.
- As the season changes each year, the leaves fall down and new leaves grow.



the children.

The duration of the project was for one and a half months with other activities being held. It was found that since various activities of diverse types were provided the children learned with interest and were keen to learn more. A few stated that making a model on the topic related was an eye opener. The slide presentation and peer group evaluation

were enjoyed by the students as the learning happened in a pleasant manner, evaluating, helping and answering each others' questions with suggestions.

#### Evaluation activities

1. Observing the students at work
2. Evaluating Tests and written assignments
3. Peer evaluation of the power point presentations to find errors and make questions on it

### *Diya's reflections*

The Making of the power point presentation was a successful activity. Suggesting the content of each slide and how to source the information on the internet and books in the library was a good idea. Children were quick to use the information, find what was missing and make the presentation lively, interesting and correct.

**Conclusion:** In making the topic Weather and Climate interesting and lively, the Diyas from various disciplines worked in a team, suggesting ideas thereby facilitating the process and nurturing the child's innate talent. As a part of the team the computer Diyas facilitated the working on slide presentation, science Diyas facilitated scientific principles of adaptation, habitation, working principles and the art Diya suggesting ideas on aesthetical presentation of the working models. Diyas worked on preparing the prototypes of the weather instruments with the students and encouraged to make it work well. They worked as facilitators by preparing the worksheets, reading cards and finding reference books and leading the discussions. In the process, the Diyas too learnt to make a power point presentation and ways to make it lively thereby becoming a co-learner in the process of teaching-learning. The most precious moments were the 'aha' moments when the child found meaning in the learning and discovered something on his or her own. The wonder and joy of discovery was infectious.

This vital education has two principal aspects,  
very different in their aims and methods, but both  
equally important. The first concerns the development  
and use of the sense organs. The second the progressing  
awareness and control of the character,  
culminating in its transformation.

The Mother, CWM, Vol. 12, p. 20

## Cuisines around the World

### **The beginning**

*In casual conversations, children had revealed their interest in and enthusiasm for cooking. They shared a common interest in watching cooking shows. One child cooked at home regularly, while for the rest it was occasional. Children expressed interest in different food types of the world and wished to know how they were prepared. Other areas of interest were the evolution of cooking, the utensils used, and how the art of cooking was practised around the world. Children understood that food had certain social connotations such as festival foods, street foods, traditional foods, foods for invalids, as well as modern food ideas such as fast food. They were eager to explore these areas as well. In addition, there was an interest in the chemical composition of food, and in how the human body broke down and processed food.*



### Aim

To understand and appreciate the geographical, social and nutritional aspects of world cuisines.

### Group needs prior to taking up of project

The first area of need is the children's ability to interact inclusively with goodwill. The group is still in the process of developing their ability **to share ideas** harmoniously and find an inclusive way of involving every member of the school in their work, whatever it may be. The second area of need is to **hone their skills of expression** through language and experimentation skills. The third area of need is the ability to **plan and manage time, space and resources**. It is only through practice that these areas of need can be addressed.

### Group Environment

Diyas created a conducive environment in the group for children to discuss freely on one another's chosen cuisine. Diyas themselves gave triggers to thinking through questions and facilitated discussions when the need arose. Different boards were dedicated to each child so that they could feel free to put on it all they wished to, pertaining to the project and finally use it as their display board.

### Objectives for physical development

Children will learn

1. the skills of cooking and cleaning before and after cooking.
2. to organise and manage a restaurant.
3. to draw and illustrate their findings.

### Objectives for mental development

Children will learn

1. to analyse the different global cuisines.
2. to recognise the distinguishing characteristics of global cuisines and appreciate differences and similarities.

3. to observe, know about traditions related to food from global cultures and cuisines.
4. to consider the future of international cuisines.
5. relate the process of digestion, nutrition and food elements so as to understand the importance of a balanced diet.
6. infer the effects of malnourishment on the quality of life for children, women and the sick.
7. develop a menu for such people with taste and quality.

### Objectives for vital development

Children will

1. express respect and empathy for those who grow our food, prepare it and take care of it.

### Objectives for psychic development

Children will

1. express gratitude for the food and joy in serving and eating, in sharing generously.
2. recognise strengths and weaknesses through self observation.

### Resources

1. Resources from Resource Centre – books, magazines, recipes
2. People - parents, grandparents, Diyas, children, cooks
3. Information on the internet  
Our Global Kitchen: Food, Nature, Culture e.g. American Museum of Natural History
4. Exploring the complex and intricate food system that brings what we eat from farm to fork
5. Cooking shows, cooks, chefs, on Indian television today  
<https://www.youtube.com/watch?v=a1dQlyNVpTI>
6. Recipe References: <https://creator-sandcreatives.com/a-recipe-for-a-great-cooking-show-89fb46983de6>

**Task: Do a survey of at least 5 persons every day. Total sample: 30 persons**

1. Do you like cooking? Why (give 3 reasons)? When did you start cooking?

*Responses:* 17 years – 10;  
20 years – 5;  
25 years – 5;  
never – 10

2. How often do you cook in a day?

*Responses:* 3 times a day – 25;  
8 times a day – 5

3. Which meal do you enjoy cooking?

*Responses:* Dinner – 25;  
Breakfast – 5

4. What is your signature dish?

*Responses:* Fish, Custard, Tofu with greens, Banana walnut cake

5. How is it made?

6. Do you like assistance when you cook, and when? Do you prefer doing it alone?

*Responses:* Assistance 13, (chopping, kneading) alone 22. (Certain people liked assistance for certain dishes or at certain times, but otherwise preferred to cook alone. Therefore they have been counted in both categories.)

7. Do you like to wind up after you cook.

*Responses:* Yes - 30

The inquiry process was undertaken individually. The children recorded oral responses to these questions and, through comparison and discussion, appreciated the data they had collected. This gave them a chance to be independent learners who sought on their own and independently made sense of the information gathered.

## Activities

### Survey

The children began their project with an inquiry that covered cooking preferences, their own as well as Diyas, as also favoured cuisine or food of the world. Children prepared a set of questions for this survey.

### Individual study

Following the enquiry, the seven children took up individual projects on cuisines of the world. They worked independently on the cuisines of Malaysia, Mongolia, Europe, North and South Africa, Japan and Hungary respectively. The following worksheets were given to the children as guidelines for their study.

### Reading card on Cuisine

A cuisine is a characteristic style of cooking practices and traditions, often associated with a specific region, country or culture.

To become a global cuisine, a local, regional or national cuisine must spread around the world with its food served worldwide.

Cuisines may be national, state, regional or local. Regional cuisines may vary based upon food availability and trade, variation in climate, cooking traditions and practices, and cultural differences.

One noteworthy definition is based upon traditional cuisine: "A traditional cuisine is a coherent tradition of food preparation that rises from the daily lives and kitchens of a people over an extended period in a specific region of a country, or a specific country, and which, when localized, has a notable difference from the cuisine of the country as a whole."

### Worksheet 1

Choose from

1. South African, North African
2. South-east Asian, Indonesian
3. East Asia – Chinese, Japanese
4. European
5. Central Asian
6. Oceanic – Australian, Indonesian, New Zealandish, Hawaiian

1. Find out what are the cereals, vegetables, meat, spices, milk products used.
2. What are the cooking processes most used?
3. How, when and what are the spices added?
4. One vegetarian and one non-vegetarian recipe which you have tasted from these cuisines.
5. Make a collage of the foods of the area you have chosen. Draw, find pictures, and write an advertisement for a restaurant you plan to open. Make a menu card. Do not forget to write the price and quantity of the portion which will be served.
6. Food fads – A fad diet or diet cult is a diet that makes promises of weight loss or other health advantages such as longer life without backing by solid science, and in many cases is characterised by highly restrictive or unusual food choices.

Find out what is a good diet for an invalid who has to recover from a stomach infection.

What is the diet of a person who needs to lose weight?

What is a good diet for a person who is underweight?

**Conclusion:** After completing the above activities the children came up with the following understanding:  
Cooking is the simple act of producing food.  
However, it has several dimensions – community participation, joy and celebration, creativity, hospitality.

### Worksheet 2

Write a 300-word essay under the following heads:

1.
  - A. Cooking and Home;
  - B. Cooking and celebration;
  - C. Cooking, a woman's activity;
  - D. Joy of eating.
2. What are the changes in cooking fuels, utensils, gadgets used in India since the 1900s.
3. Kitchen designs and what your dream kitchen will look like.
4. Exotic ingredients and ways to cook them – galangal, lemon grass, caviar, mangoes raw and ripe.
5. Desserts of the world.
6. Foods on the go - Street foods of the world and India
7. Eating utensils of India and Europe.

### Biology of food

As the project progressed, children also learnt a little more about the biology of food and its chemical composition. They carried out tests on the chemistry of Carbohydrates, Proteins and Fats. They also studied the process of digestion alongside. Children sourced recipes from their chosen country and studied a little about the climate and natural terrain of the country, to understand how these influenced the type of cuisine that evolved.

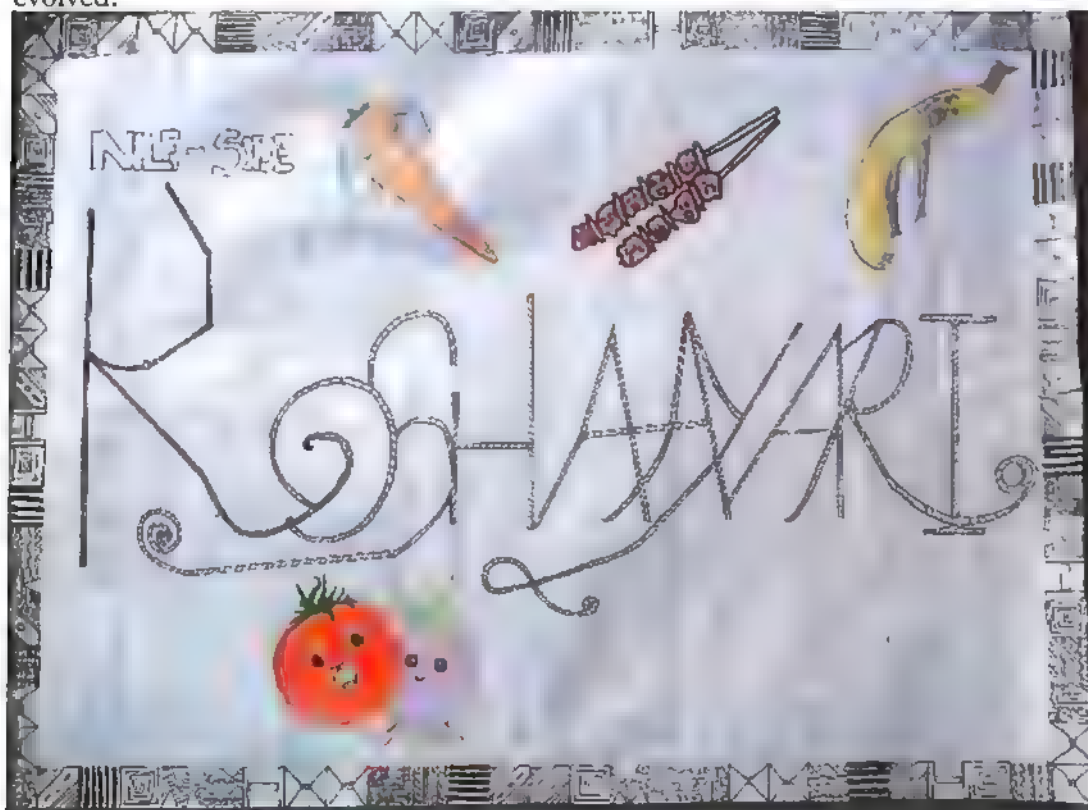
### Aim

To understand issues related to Food. General discussion on Fast Food and Home-cooked food.

Children then prepared for a debate: motion: Fast Food is a boon in today's society

Children have their debating skills analysed and informal feedback is given.

Children then prepared for a debate.



**Objectives:** Children should be able to prepare for a debate by listing points on a given topic and elaborate on them in a debate session. Children should also learn the rules of debating and the role of all three or four speakers in the team.

### Debate

This was introduced when the children found the essays difficult. Children were enthusiastic about a debate on the theme of 'Food'. The topic was a suggestion from the facilitating Diya and children took to it immediately. There were two rounds of these debates after which children were invited to write out a summary of their



choice, whether proposing or opposing the motion. This activity required children to think independently in a group and brought about the exchange of ideas as well as processing information to construct reasonable arguments about their thoughts on food. The motions revolved around traditional versus fusion food, and consuming home cooked versus fast food.

Since the debate came about due to the children's inability to write coherent essays, the activity was rounded off by the children attempting an essay on either of the debate motions. The essay was to be written taking care to substantiate iterations with evidence.

1. the writing was to be well organised with paragraphs.

## Recipe

### Writing and preparing

The children read the following recipe and filled in the blanks using the cooking terms they had learnt.

Vegetarian Shepherd's Pie.

Serves 4 people.

Preparation time: 30 minutes.

Cooking time: 20 minutes

For the vegetables:

1 tbsp vegetable oil, 1 onion, finely chopped, 1 clove of garlic, crushed, 1 stick of celery, chopped  
1 leek, halved and sliced, 1 carrot, diced, 420g can mixed beans, drained and rinsed  
400g can chopped tomatoes  
1 tsp dried mixed herbs, sprinkle  
1 tsp tomato purée, add salt and freshly ground black pepper

For the mashed potato topping:

700g floury potatoes, peeled and cut into chunks  
150ml milk 85g cheddar cheese, crumbled

## Method

1. Preheat the oven to 180°C.
2. \_\_\_\_\_ the potatoes in a pan of lightly salted boiling water until tender.
3. Meanwhile \_\_\_\_\_ the oil, add the onion, garlic, celery, leek and carrot and \_\_\_\_\_ gently for 10 minutes.
4. \_\_\_\_\_ the beans, tomatoes, herbs or chilli powder and tomato purée with 3 tbsp water. Season to taste and simmer for 5 minutes.
5. When the potatoes are cooked \_\_\_\_\_ them and heat the milk to boiling point. \_\_\_\_\_ the milk over the potatoes and mash until smooth. Season to taste. \_\_\_\_\_ in half the cheese.
6. Spoon the beans and tomato mixture into an ovenproof dish and top with the cheesy mash. \_\_\_\_\_ over the remaining cheese.
7. \_\_\_\_\_ for 20 minutes until the topping is golden.  
\_\_\_\_\_ the rosemary.

2. appropriate punctuation was to be used.
3. grammar usage was to be sound.

### Food festival

#### Food preparation

Children's study on the cuisines of the world culminated in a food festival where the school received a taste of food from different parts of the world, prepared by these children of Harmony. It was a significant moment for the children as they explained the nature of the food they had prepared and a description of the basic geography of the country whose cuisine they had chosen to study. They received support at home too in preparing the dish of their choice.

Children were beaming with pride as they presented and watched other children

relishing their well prepared dishes.

#### Guidelines

The following guidelines were given to the children to plan out their food festival.

- a. Choose a day and give a suitable title for the event
- b. Go to each group and explain what is special about this food festival and what to expect
- c. Organise the venue
- d. Organise the foods to be included
- e. Set up the eating arrangement and washing facilities.

After the food festival, the following activity was done.

Do a survey of all those who came to the food festival to find out:



Sumo - The Japanese dining

1. What was the best dish and why?
2. What would you organise differently?

### Means of Reflection and Evaluation

A. Children were asked to reflect on the following questions:

1. How did I prepare myself for this project?
2. How did we evaluate ourselves?

B. Children led a discussion about the recipes:

1. Similarities and differences in the dishes
2. Part of the recipe that makes it characteristic of the cuisine
3. How the ingredient is used in the recipe

C. Quiz for Review:

Each child made a set of questions for the quiz from his area of study. There were about 50 questions in all. Here are 20 examples.

1. What is the name of the gas that lets bread dough rise?
2. What is Japanese sake made from?
3. What is the chemical formula for Table Salt?
4. Common berry in Australia?

5. Cereal of Southern Africa?
6. Which is the most common spice in Hungary?
7. The one meat most used in Mongolian cooking?
8. What are the ingredients in harissa?
9. What makes the Japanese diet balanced?
10. Name four spices used in western European food?
11. Name four shell fish used in Japanese food?
12. Which dish adds spice to Indonesian food?
13. What is the oil used in North African cooking?
14. Name the different types of milk.
15. What is the dish during Christmas in Mongolia?
16. Which vegetarian dish is rice used as a side dish in South Africa?
17. Which animal in Indonesia provides beef?
18. What is the staple side dish in Japanese food?
19. Which cooking process is most common in Southern Africa?
20. Which meat in traditional Australian cooking is now banned?

### Diya's reflections

#### A. Survey

The survey helped the children to have a discussion with children of different age groups and find out how they thought. They realised that everyone had views about food different from their own. They realised that many children liked bitter gourd and did not enjoy pizza. It was an enjoyable experience.

#### B. Worksheets Activity

The completion of the worksheets required children to find, compose and respond to questions, answers for which information was not readily available. In each of the

regions, there were many spices, ways of cooking and gadgets which the children had to find out about, and this had them go to restaurants and ask the chefs what the words meant.

When the presentations were made, it became clear that certain ways of cooking were common throughout the world like boiling and roasting. The essays were mostly on the exotic ingredients in cooking, the special tastes were described in detail in the essay as personal experiences came into their writing.



The children sensitively put together a diet for the sick and those recovering from stomach problems after consulting their families, and realised that food was important for recovery.

### C. Report on Debate

Most of the children could only speak for about 20 seconds out of the 2 minutes allocated to them. There was a dawning of the sense of time during the exercise. **N** was able to elaborate her points and she exceeded the time given. **NL** was a natural debater but he needs to work on researching on his ideas. **A** needs to be aware of his mental resistances about defending what he is not familiar with. **S** was an enthusiastic participant and has much potential. **H** tried and was clear in the articulation of the one or two points he offered. Though **AA** was confident, she too said a few words and stood waiting for time to be up. In all the children, the skill to elaborate their points verbally, or to substantiate was not evident. Those who opposed the motion emerged a more confident team.

The children showed improvement in the second debate. They had made some serious research and were not casual about it, especially the proposing team. The points elaborating the good of fusion food were well put across. All the children were able to speak for a longer span of time, edging closer to the 2 minutes mark. **A** also was passionate about the topic this time. It was something he believed in and therefore he could deliver his points with conviction and spontaneity. There is a need for **A** to appreciate both aspects of a proposition and be able to present the points accordingly. He was clearer this time, but his articulation needs to improve. **K** emerged as the best speaker as he spoke his points clearly, with conviction and poise. **AA** may not be aware how to go about this process and a one to one conversation may be needed. When most of the children suggested that we continue with more debates, she declined. At one point, she pointed out to **A** crassly that he was

mumbling. I took this opportunity to express about observing a certain decorum in public speaking, especially in the ability to invoke respect and also to work more on oneself than to level comments at another.

### D. Overall Project

The Food project emerged as a felt need of the children. It was their first detailed project and they found it hard to sustain their interest in all areas. The food festival was nearly 4 weeks later (and after a vacation), so their interest flagged. However, a few days before the food festival, they found themselves preparing in a great flurry. The outcome was encouraging and memorable. It was an effort to combine information and content related to cuisines, health and food, gadgets and cooking into an interesting narrative. Had there been more films and visits this may have become more efficient. An important learning for me was that if there is activity followed by discussion there is more participation rather than giving all the information before doing an activity.

### E. Shortcomings in Learning

The children were found to not be keen to write essays. They did not exhibit independence in planning for the food festival. A fair amount of coaxing and guidance came from the Diyas, initially.

**F.** In the course of the project, children, all aged around 12+ were put in a situation where they had to cull out their own (i.e. thoughts, feelings, inclinations, inhibitions) and stand face to face with who they were, with their strengths and weaknesses and put together an 'act' their very own. This project was a subtle invitation for the children to take a step back, take cognisance of their abilities or strengths and stand on these, while working to transform tendencies in them that did not help them progress.



## Children's reflections

### A. Food festival

**Child 1:** The restaurant I had 3 tables and 3 chairs only and many canna leaves. It was a success eventually, but it started badly. I did not have any plates to eat on, and finally I had to cut the canna leaves which resemble the banana leaf. I was really happy when the guests liked what I had cooked which was called BOBOTI. I felt I could have told the guests more about South Africa. I did not like it that the children had only 5 minutes in my restaurant.

**Child 2:** I felt many people felt that there was too much salt. What I was trying to do was to give all my customers a Japanese dining experience. I had a really good experience and at first I was feeling nervous because it was a first time for me.

**Child 3:** At first I was very nervous about the speech on North Africa. Making my dish was tedious and the outcome was sweet (not literally). What I love about North Africa is the variations and that the same dish would be slowly cooked or just put together. There are minor differences which change the taste so

much. I am sure everyone understood this when they heard me.

### B. Overall Project

**Child A:** My aim in this project was to give the guests an understanding about my (chosen) country. Most of the guests said that my special dish was very nice and that made me happy. I did not like it when the guests began talking about their hometown or got up and left when I was presenting. I could have made my presentation faster and told them to question later.

**Child S:** When I began, I felt like I really should have practiced what I was going to say. I started stuttering and I was quite sad when they did not like my cabbage roll at all. I did not run the restaurant like it should have been and the guests did not get to discuss and order from the Koshiyari menu I had specially designed. Making my dish was quite tedious. I loved North African cuisine because of the variations. In one country there were dishes which were baked and in another the same dish was slowly cooked. These small differences changed the taste of the food. This is something I made everyone understand by repeating it many times.



## The beginning

### Historical Sense

*Children in Mirambika develop a sense of the past from an early age as they move up the developmental ladder, learning the language of time and change, recursively — in diverse contexts— through skill-based lessons and integrated projects. In this process, they learn to find and interrogate sources relevant to a topic of interest and construct evidence based explanations to justify a conclusion. Additionally, they also bring their own social and emotional worlds to the process of learning as they construct, deconstruct and reconstruct their understanding of the past.*

*At 12+, children in the group have begun to build a nascent understanding of reasons that drive human thoughts and behaviors, causes and consequences of actions and how collective experiences of individuals and societies that have accrued over time produce the idea of history. They gain all this through popular culture, local histories, print and electronic media, family experiences, personal memories as well as structured projects in school. They have also begun to use these learnings as building blocks to filter and interpret knowledge about the past. This aids them in creating their own identity, understanding and responding to change, forming a sense of continuity and rootedness, and figuring out their own role as active agents in the society.*

## Feudal Societies

### Why a Project on Feudal Societies?

*The project on Feudal societies in the world was taken up to explain and understand the transition to the modern world. The children had done projects earlier on the environment today, the life of people in different climates and now it was necessary to understand how the changes came about in time.*

*We hoped that the context of this project would give them the opportunity to dig into the past to trace the trajectory of this change and appreciate its continuity into the present. The Middle Ages was an apt theme, as its inception marked the final cut-off from the ancient era and its decline signalled the transition into the modern world. We wanted them to acknowledge that many of our modern sensibilities, ideas, and conflicts have their roots in feudal societies: religion, patriarchy and the concept of a master. We structured the project such that they could appreciate how the long and complex evolution of the feudal society brought the first gleams of free thought, together with a distinctive style of poetry, painting, sculpture, architecture, and science and eventually led to a new and more progressive social formation.*

## Aims

### Objectives for physical development

- Physically organise and present information.
- Draw and prepare the posters for display.
- Resourcefully arrange the information systematically.
- Arrange the books in the library for use.

### Objectives for mental development

- Understand and collate information regarding the different aspects of the middle ages related to the topic that was chosen from Cuisine, Clothing, Music, Art, Festivals, Architecture, Housing/City Planning, Religion, Writing/Language, Education, Travel, and Transport.
- Discuss and analyse the information presented by their group mates and relate to their own area.
- Critically review the constructs and beliefs regarding society, education and conditions of work in the middle ages.

### Objectives for vital development

- Appreciate the contributions of scientists and religious movements to the development of thought.
- Aesthetically present and clearly articulate the ideas regarding the different aspects of the middle ages.
- Value the present developments and understand the needs of the future.

### Objectives for psychic development

- To feel and sensitively respond to the time and life in the earlier days and recognise the thread connecting us to the past as well as to the future.

## What were the enduring learnings from the project?

Students engaged with the Middle Ages by investigating a variety of themes such as cuisine, architecture, music and art, travel, housing and city planning, religion and education. We used these familiar entry points that are ubiquitous in our times to aid them in constructing a picture of the feudal societies in a relatable fashion.

### 1. Chronological Framework

Feudalism was one of the most crucial stages of historical development for the countries of Europe and Asia, and for a few countries of Africa and America. The period during which it originated, flourished and declined is commonly known as the Middle Ages.

The chronological framework for the Middle Ages is staggered for different continents, countries and people. It began in the late 5th century A.D in Europe while it started a little earlier, around 3rd-5th centuries, in Asia. The 17th century is generally considered to be the line that marks the shift from the Middle Ages to the modern times. Working with life and culture across these differentials of geography and time and yet seeing the commonality gave the children a chance to refine their understanding of periodization and to build their capacity to link chronologies.

### 2. Characterization

The Middle Ages saw the inception, rise and fall of feudalism. The economic basis of feudalism was the land that belonged to the feudal nobility. The peasants worked the land and depended on the nobility to be paid for by either work, produce or money. The political system was typically that of absolute monarchy.



All aspects of life—culture, religion and education—were a product of the economic and political formations of the feudal system.

Further, the feudal societies developed their own culture which was quite distinct from the slave society that preceded it and the modern society that succeeded it. The three great religions of the world, Christianity, Islam and Buddhism were established during this era which shaped the cultural and spiritual life.

In all, we expected that the children will get a peek into the tumultuous paradoxes of the era where on one hand religious fanaticism, feudal violence and the struggle for justice reached a crescendo and on the other hand great nations were created, extraordinary achievements in literature, art, architecture were made and the first stirrings of scientific temper felt in the period's dying throes.

### Group needs

The group had an understanding of the conditions of the environment and people in the contemporary world and were not clear how these developments came about. They had to understand that discoveries of science, travel and conditions in different parts of the world happened in the middle ages. How and by whom this happened was a matter of curiosity.

The major needs of the groups were:

- To source information, interpret and put in context the different trends and explanations given by historians.
- To present findings in coherent and correlated manner to bring group harmony and work together yet independently.

- To learn how to combine different kinds of evidence be it from films or books.
- To develop a coherent argument based on these information and assess conflicting interpretations.
- To gain experience in assessing examples of change that took place in the past and continuity.
- To deal with intersections of race, gender, economy, military, religion, class, urbanisation.

### Shortcomings

The children took an inordinate amount of time to collate the information and write their own interpretation of it. The project lasted over 5 weeks with 3 hours a day. The memory about others projects was not as good as that of their own project so the image of the feudal society was constructed of scattered categories rather than a connected whole.

Additionally, we noticed a tendency to evaluate the past through the lens of their own beliefs and current-day values. In future projects, we would focus more on building empathetic thinking while studying the past.

### Group Environment

An organization of the physical environment is one of the key components of every project taken up in Mirambika. The physical space is strategically prepared to pique the learner's interest and create a stimulating space for individual and group work.

For this project, we put up topic related pictures on the display board, shared copies of the report writing sheets and print outs of relevant articles. Children exhibited their findings on the different



themes in the group, using posters, pictures and drawings to consolidate their understanding of feudal societies.

### **How did the children construct the inquiry?**

Since the theme of feudal societies is fairly complex, we scaffolded the process of inquiry by offering children a planning sheet with leading questions. This gave them a structure to proceed towards a common goal and at the same time allowed them the space for independent inquiry. The note they wrote was discussed individually and the final report was presented by each child on the different areas to the whole group. Suggestions were invited and corrections were incorporated.

The planning sheet included the following:

1. History of the chosen aspect and a comparison with the ancient era.
2. Details about the chosen aspect of the feudal societies from two separate periods or regions, one of which should be from a period in the Indian subcontinent.
3. Comparing and contrasting the feudal aspect with how it is today in the modern times.

### **Activities of information collection and processing**

The fabric of human society is a complex conglomeration of a shared lifestyle. Such sharing normally takes place within certain geographical areas. The lifestyle evolves over time, but when we look at these closely and carefully, we can spot the elements of continuity which are considered to be the roots of that society or social culture.

The shared lifestyle of a community or society has many common constituents like food and food habits, clothing, housing, along with a host of other cultural facets like music, literature, art, architecture and performing arts. Such social cultures are also marked by their religious faith or faiths, economic activities, scholastic and scientific endeavors. Within a specific culture the sharing occurs through sets of formal, almost ritualized interpersonal transactions which are commonly termed as social customs.

In this project, the students chose to work upon specific topics like cuisine, clothing, housing, music, festivals, religion, travel, transport, housing/city planning, writing/language and education of the feudal societies of Europe and India. The idea was that they research on these topics and processed the information into forging a historical framework. Keeping this in view certain questions were raised which could work as cues for the type of materials which they had to collect from various sources like books, internet and films and collate them. The questions were diverse and wide ranging. These were chosen to meet the twofold aim of integrating:

(a) a student's ability to collect relevant information and

(b) to process that information into broad historical contexts.

To facilitate the latter ability, some of the questions were reflective in nature. These activities are delineated according to the topic-heads that follow.



### Cuisine

In the sphere of cuisine, while the students on one hand were encouraged to find how the regional cuisines evolved, they were also asked to present their takes on whether these evolutionary changes had anything to do with the feudal structure of the society. Secondly, they were guided to focus on the regional variations of cuisine and if those variations could be explained within the context of 'closed' feudal structures.

Given the fact that most of our traditional dishes have a fairly long history, the students were asked to find out why, for example, Rajasthan cuisine is so different from Kerala cuisine. Does the difference stem from the usage of

locally available ingredients, or does it still bear the lineage of area-specific feudal customs? Were the common people in the Mughal period able to consume the kind of dishes the nobility had is another question the students were asked to deliberate.

Again, because of social and religious compulsions, the Bengali widows were barred from eating a whole range of food that consisted of meat, fish, onion, lentils, to name a few. In response, a subtle tasting cuisine was created by them, which used commonly found cheap vegetables and leaves. Students were asked how this variation was influenced by feudal practices.

### Religion

In the Middle Ages, religion happened to be the primal force that bound communities together and defined their social customs. And yet, it was during those times that various social movements occurred which led to what might be termed as democratization of religion. For example, in Europe we saw the rise of Protestantism which deeply affected the primacy of Roman Catholic Church; in India we saw a resurgence of Bhakti and Sufi Movements.

Religion in feudal societies was a topic that was included in the project. A question the students had to deal with was about the nature of organization of religion in the Middle Ages and now. They also found out the role of priests, the kind of influence they wielded over communities and rulers (for example,

for a long time in Europe, kingships depended on Papal sanctions) along with the 'uneasy' relations between the Church and the State and the nature of revenues earned by the Church in the Middle Ages. This came in comparison with the influence of the priestly class in the Indian subcontinent, where religion was more sectarian and not under any single religious authority.

Differences in daily lives because of religious variations were also noted by the students. In certain cases, such differences still exist. Whether these differences belong to a continuing tradition that had its origins in feudal society was a topic the students' attention was drawn to. To bring in a concrete example, the different meat cooking styles of the Kashmiri Pandits and the Kashmiri Muslims was discussed.

### Feudal Religion and Festival



## Clothing

Both Arabia and Rajasthan have desert conditions. Yet, in Arabia the attires are mostly white, while in Rajasthan it is a riot of colors. What are the factors that come into play in such regional variations in clothing is another theme the students explored in the course of the project. Apart from geography and climate, in feudal societies the kind of dresses people wore reflected their position in social hierarchy. In Rajasthan, both the color and the design of the dress showed the wearer's caste.

In feudal societies, how the social stratification was perpetuated through strict dress codes, is an area that has been explored and highlighted in the project. The students were asked to compare how such dress codes were maintained in feudal Europe, China and Japan.

## Architecture

Buildings and their functions tell us a lot about the people who built them. Through their designs and functions, what does the architecture of the feudal societies tell us? While studying the nature of feudal societies the students investigated whether the hierarchical structures of feudal societies found their reflections in their architecture.

In what ways the buildings of the nobility were different from those of the masses, the kind of temples and monuments erected in those times and the materials used to make them were also studied by the students. Whether it is possible to surmise the strict class differentiation which existed in feudal societies by looking at the houses found in Indian and African villages is another activity the students were encouraged to engage with.

## Music

In the context of feudal society, music can broadly be divided into two segments: classical and folk. Classical music grew out of the patronage of the nobility; folk music belonged to the common ranks.

In the project, the students were asked to find out facts about some of the famous classical musicians both in Europe and in the Indian subcontinent. They were also asked which section of

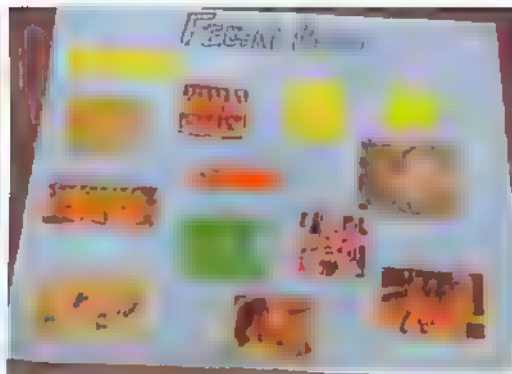
the society patronized classical music (the Mughal emperor Akbar had Tansen as his court musician) and how they were trained. Similarly, they also explored who were the folk musicians and who did they sing for. They also probed whether it was possible for a folk musician to climb the social ladder to become a classical musician in a feudal society. Students also gathered information about the music of feudal China and Japan.



## Education

Education in feudal societies was in many senses different from what we mean by education today. There were some primary schools (like pathshalas in the Indian subcontinent) and barring religious education, almost all education and vocational training began with apprenticeship. For example, Michelangelo learnt his craft not from any art school but by working as an apprentice to Ghirlandaio.

In the course of the project, the students scrutinized the differences between education and apprenticeship. They also probed whether prevalent systems of learning in feudal societies actually helped the learners to become more educated or they were more inclined to imparting skills required for particular trades. Further, they discussed if madrasas, bible schools, chanting Vedic or Buddhist shlokas would make a learner educated in the modern sense of the term. How these religious schools have segregated the society was also a question left for the students in the project.



## Travel

Human immigration is a driving force that creates history. In the Middle Ages there were lots of travelers going from one place to another for various reasons like trade, pilgrimage or war. Many travels took place because of marriage too. Many fled from their homelands because of oppressive rulers. The students studied about these travelers (common people, farmers, artisans, traders, and soldiers) and why and how they traveled. The distances people used to travel in those times and the eating habits on the road too have figured in the project. Movements of army in the Middle Ages from one place to another were also a theme the students dealt with.

## Housing/City Planning

In feudal societies, the kings lived in palaces which were usually built within forts. Many medieval cities were built within the precincts of such forts. While the rich and the noble lived in palatial buildings, the commoners had humble dwellings. In a tightly hierarchical and segregated feudal society, the city areas were planned in ways to maintain that segregation. In the Indian subcontinent, the Chandals were not allowed to enter the public spaces frequented by people from 'upper castes'.

In the project, the students were guided to inquire into the houses and city planning in various feudal societies. They were also asked to find out how people lived in the villages; how both the city and the village spaces were demarcated for various social classes was also a significant theme in the project.

## Festivals/Celebrations

In feudal societies, apart from religion, festivals were something which held communities together. For a better understanding of feudal societies, the students were asked to find out information about the festivals and celebrations that took place in those societies. Apart from harvest and religious festivals, the coronation of a king, a royal marriage or the birth of a prince also heralded moments of social festivities. The students were asked to find out about those festivals, how these were celebrated and who sponsored them, among other things. They were also asked to find out about two major religious celebrations that have existed since medieval times – the Kumbh Yatra and the Haj.

## Art

Almost every feudal society has had a heritage of painting. However, the painters did not enjoy the adulation they do today. Though in Europe there were several exceptions (like Michelangelo), in the Indian subcontinent they were mostly artisans. For the artisans, painting and creating art objects were family or community profession. Personal signatures mattered little.

The students studied and compared the Mughal and Rajasthan miniatures with that of the paintings from feudal China, Japan and Europe. They also found out facts about Bijapur and Ajanta cave paintings. Along with this, they explored the kind of social lives depicted in those paintings along with facts about the artists and their social position. Were these paintings all

about the rulers or whether they have scenes from common lives was also a question they dealt with. They were also asked to find out information about local art forms like Madhubani and Pattachitra.



## *Evaluation of the project by the Diyas*

How did we evaluate?

The project was evaluated continuously by the quality of the written work and the children's ability to follow the information from the books and films. The final act of creating the exhibition brought out the effort and organisation capacity of the children which was the main objective. The project helped develop a lot of new ideas of what and how the middle ages was different to today. Though it took a long time, the outcome was detailed and well documented and the children remembered their area well. The other groups too listened but were not very attentive as the context was beyond them. The Diyas who saw it liked the information. Since the resource person was doing the project, my role was more to coordinate and help the children which gave me a chance to research with the children and make the materials easier for them to understand and appreciate Dr. Kumkum Roy Professor of History, JNU, as she shared her expert knowledge with the children.

Self reflection: Was the aim achieved? Shikha Sen (project coordinator): To me, History is not merely a subject. I believe reading and understanding the past is crucial to becoming a meaningful citizen of the world. It is only by reading history that we can become better persons, less bigoted, inclusive, aware of the wider picture and able to use logical reasoning. In a world view where the line between mythology and history

is rarely comprehended, where religious bigotry, an inability to recognise social inequalities and misogyny are manifest, it is only the study of history that can lift us from this quagmire of regression that we are all stuck in.

Childrens' views:

1. From the start, we were taught never to look at facts and generalise. We learnt to look at the source of the facts and how the person at that time might have envisaged it. We used all these techniques when we studied the area we had chosen.

2. Teacher gave us the background, showed us movies and we read texts, but what we did with the information and how we presented it was our choice. We ask questions that those older than us cannot ask.

What was not so successful were the discussion on fact, generalisation, inference and logic. The children had a more imaginative view to the readings and always put in their opinion as experienced by them today. Thus, the going back to the period was not so successful.

In retrospect, we could have incorporated more story-telling, reading fiction, making a play along with the exhibition and going back in spirit to the period by dressing up and acting the conditions of the time. We would also have liked to put the political history in context for the children.



## SAMPLE WRITING

### History of clothing

Aryaman age 11+

It is easy to forget that there is a history to the clothes we wear. All societies observe certain rules, some of them quite strict, about the way in which men, women and children should dress, or how different social classes and groups should present themselves. Let us study the evolution of Clothing:

Palaeolithic Period 2.5 million years ago to 9,600 bce

- In The Lower Paleolithic age there is no direct evidence (such as clothing remnants, tools or artifacts) that Australopithecus and Homo Erectus (or those in between) wore clothes, though scientists continue to debate whether or not they could have survived extreme climates.
- In the year 1991, on a September day, the discovery of a well-preserved body, what was later named 'the Iceman', was found. The clothing in which he was covered in was so well preserved it was able to give scientists and anthropologists an idea about clothing in the Neolithic period. Everything from the boots on his feet, the cloak he wore, the leggings around his legs, and the cap on his hat were made up from various furs that has been sewn together. The lining of the boots consisted of grass, in order for better insulation, as well the same material was used to be weaved into a 'cape looking' article of clothing over-top of everything else. The only other material that was used was leather. As a matter of fact, the Neanderthals were the first ones to use dye in clothing

- In the neolithic era grass, bark and other coarse plants are woven into various forms of protection. The first evidence of woven linen (flax) cloth dates back to the early 6th millennium BC in Turkey, but Western Europe did not produce any known flaxen cloth until about 3000 BC. Also found in Turkey is evidence of some of the first known fibre-dyeing.

In medieval Europe, dress codes were sometimes imposed upon members of different layers of society through actual laws which were spelt out in some detail. From about 1294 to the time of the French Revolution in 1789, the people of France were expected to strictly follow what were known as 'sumptuary laws.' The laws tried to control the behavior of those considered social people, preventing them from wearing certain clothes, consuming certain foods, beverages and hunting game in certain areas.

The French Revolution ended these distinctions. As you know the members of the Jacobin clubs even called themselves the 'sans culottes' to distinguish themselves from the aristocracy who wore the fashionable 'knee breeches'. Sans culottes literally meant those 'without knee breeches'. From now on, both men and women began wearing clothing that was loose and comfortable. The colors of France – blue, white and red became popular as they were a sign of the patriotic citizen. Other political symbols too became a part of dress: the red cap of liberty, long trousers and the revolutionary cockade pinned onto a hat. The simplicity of clothing was meant to express the idea of equality.



The end of sumptuary laws did not mean that everyone in European societies could now dress in the same way. The French Revolution had raised the question of equality and ended aristocratic privileges, as well as the laws that maintained those privileges. However, differences between social strata remained. Clearly, the poor could not dress like the rich, nor eat the same food. But laws no longer stopped people's right to dress in the way they wished.

Before the seventeenth century, most ordinary women in Britain possessed very few clothes made of flax, linen or wool, which were difficult to clean. After 1600, trade with India brought cheap, beautiful and easy-to-maintain Indian chintzes within the reach of many Europeans who could now increase the size of their wardrobe.

**India:** Indians have mainly worn clothing made with locally grown cotton. India was one of the first countries where cotton was cultivated and used even as early as 2500BCE during the Harappan era. The remnants of the ancient Indian clothing can be found in figurines discovered from the sites of the Indus Valley civilizations, the rock cut sculptures, the cave paintings and human art forms found in temples and monuments. These scriptures show the figures of human wearing clothes which are to be wrapped around your body. The instances are the sari, the turban and the dhoti. The traditional Indian wears were mostly tied around the body in various ways.

The social and the economic status has an important role to play in the clothing

system. The upper class could afford to wear expensive material like silk and muslin, but the lower classes could only wear clothes which were made of local material which was less expensive and affordable. For instance, a rich woman would wear silk and muslin but a low class woman would wear cotton. Lets study the changing pattern of clothing in India during different periods.

## Indus Valley Civilisation

- The only evidence found for clothing is from iconography and some unearthed Harappan figurines which are usually unclothed.
- Evidences show that men wore a long cloth around their waists and fastened it at the back like a clinging dhoti.
- The normal dress of a woman was a skirt up to knee length.
- Men of some community also wore turbans.
- Material used for clothing was mostly cotton, flax, leather, silk and wool.
- We have evidence of coloured cloth from the Harappan period showing the art of dying clothes different colours.

## Vedic period 1500-500 BCE

- Sari was the main costume for women in the Vedic culture.
- There was a garment called pravara which they wore in winter.
- In those times, no upper garments were worn and men would only wear dhoti to drape themselves.
- Wool, linen, muslin and silk were the main material used for making clothes.

### Resources

These films and readings were used for the investigation about the different aspects of the middle ages.

### Print resources

1. NCERT text book for classes 6 and 7
2. Ancient and Medieval India - Upinder Singh
3. History of World 3500 BC to 2005 AD

### Internet Resources

1. Timeline of events in the middle ages:  
<http://www.timemaps.com/history>
2. 100 Greatest Discoveries: "Bill Nye "The Science Guy" hosts a new series that highlights the greatest scientific discoveries of all time, from the earliest time to the present day. The series features nine episodes: Evolution, Earth Sciences, Medicine, Physics, Astronomy, Chemistry, Genetics and Biology, plus a wrap up episode featuring the top 10 discoveries of all time.

a. EP1 :Astronomy : Copernicus first theorized that the Sun was the center of our solar system, but it took the work of Johannes Kepler to prove it. Learn why the universe is expanding and meet modern astronomers who gauge the likelihood of life out there.  
<http://www.youtube.com/watch?v=j8tTgM-ryASU>

b. EP2 : Biology : Hundreds of years before the first DNA test, "Micrographia" championed the use of microscopes and set the stage for the first major discovery in biology: microorganisms. Learn how the secret of the cell was solved and how starfish led to the development of stem cell research.  
[http://www.youtube.com/watch?v=4F\\_qwWFr158](http://www.youtube.com/watch?v=4F_qwWFr158)

c. EP3 : Chemistry : Joseph Priestley initiated the study of chemistry in 1770 with the discovery of oxygen. From there, witness the

development of plastics and a familiar table that has confounded high school chemistry students for generations.

<http://www.youtube.com/watch?v=xEjSgWyJMkE>

d. EP4 Earth Sciences Venture beneath our planet's crust for a look at the powerful geological forces that keep life on the move and adapting to plate tectonics, earthquakes and super volcanoes.

<http://www.youtube.com/watch?v=fM1CgvTIEhw> there

e. EP5 : Evolution : From the discovery of the dinosaur-killing KT asteroid to Carl Linnaeus' still-used life form classification system to the groundbreaking theories of Charles Darwin. Learn how intelligent life began on earth.  
<http://www.youtube.com/watch?v=doqeAg1zKgU>

f. EP6 :Genetics :Gregor Mendel's work with pea plants pioneered the study of genetics, but it wasn't until the creation of the double helix DNA model that the field really began to take off.  
[http://www.youtube.com/watch?v=qN65\\_vykYKI](http://www.youtube.com/watch?v=qN65_vykYKI) there

g. EP7 : Medicine : With physician Andreas Vesalius's groundbreaking anatomical drawings in 1538, a new science was born. Witness the horror of a pre-anesthesia operating room, see how X-rays were discovered and meet the man who developed the first vitamin.  
<http://www.youtube.com/watch?v=ys-C6PVoxaA> there

h. EP8 :Physics : Learn how physicist Sir Isaac Newton developed his three laws of motion and travel inside the atom for an explosive look at Einstein's best-known theory.  
<http://www.youtube.com/watch?v=oBct-tacQ2as>

Higher, always higher! Let us never be  
satisfied with what is accomplished

The Mother



# Towards Freedom

## **The beginning**

*The importance of freedom, the need to preserve it in times of struggle was a constant area of debate in the classroom. Children who had spent 10 years in mirambika were now thinking of life in schools controlled by an examination system based on memory. Further it was now necessary to learn the facts and events that led to the Freedom of India. The final reason was the growing interest in resistance to oppression, the ways to show one's resentment and the importance of choosing between violence and peace.*

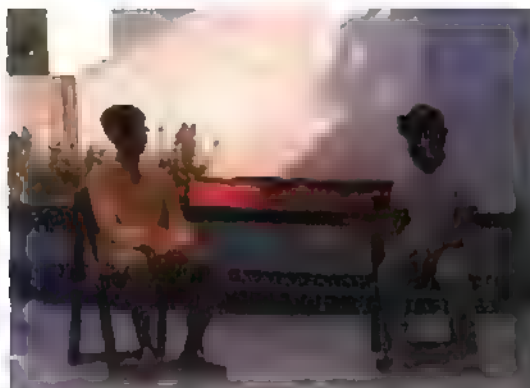
## **Aim**

To understand freedom and appreciate the need for it and the ways and means at our disposal to gain freedom.



## How did the children become independent?

The children became independent when they began to read and collect information on the different areas given to them and discuss the reasons for the growth of the freedom movement. They were able to ask questions, source original writing and pictures, read interpretations by historians, and study the NCERT textbooks for class 8 on the national movement in India. They also heard the speeches given today by the Prime Minister and weighed the needs of today with those of 70 years ago.



Gandhi-Irwin talks

## Group needs

The group had an understanding of the conditions of the environment and people in the contemporary world but were not clear how these developments came about. They had to understand that there was a social and political upturning which led to the freedom movement. The group needed to be able to source information, interpret and put into context the different trends and explanations given by historians.

Presentation in a coherent and correlated manner was necessary to bring group harmony, working together, yet independently. This became possible

through presenting their understanding as a play.

## Shortcomings

The children took an inordinate amount of time to collate the information and write their own interpretation of it. The project lasted over 5 weeks with 3 hours a day.

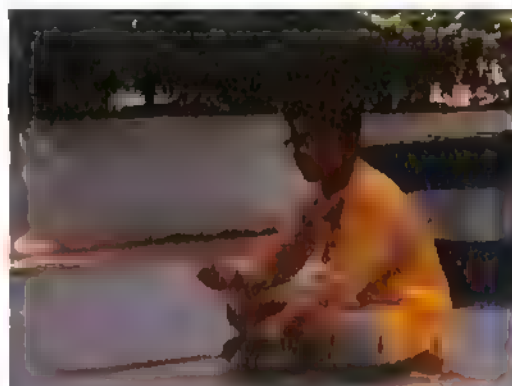
## Group Environment

The group had a portion of the soft board dedicated to the play. The properties needed, the feedback about the performance, the areas into which the



Speech at Jallianwala Bagh

play was divided and the responsibility of the script writers were displayed here. There was a Director, who reluctantly agreed to monitor the progress of rehearsals and roles.



## Aims

### Objectives for physical development

1. Learn to act and present before an audience.
2. Organise and arrange information systematically; arrange the books in the library for use.

### Objectives for mental development

1. Understand and collate information regarding the different aspects of the freedom movement and research the causes, trends and outcomes.
2. Discuss and analyse the information presented by group mates and relate to one's own area so as to decide on the event to be presented in the play.
3. Critically review the constructs and beliefs regarding society, education and conditions of work in the modern period.
4. Understand why there was a growing flame of wanting to throw off the shackles from our motherland.

### Objectives for vital development

1. Appreciate contributions of different persons in the freedom movement — from the pro changer group, the revolutionaries and the secularists.
2. Aesthetically present and clearly articulate ideas regarding different aspects of the modern age.
3. Value present developments and understand the needs of the future in a democratic India.
4. Feel and respond to the time and life in a period when we were a colonial state and compare it with the times of freedom today.

*Resources - Books, Internet, Resources from library, Key words, and reference*

1. NCERT text book for classes 9-11
2. Bipin Chandra – Modern India. NBT
3. Indian History, by Manjishtha Bose

### III. Project progress and Evaluation

The children being in class 8, and on the threshold of transition to the regular school system, we too have had to maintain a delicate balance. We do want them to make the most of Free Progress Education for their last year with us. Free Progress is inherently uneven, as the emphasis is on how to learn, rather than what is learnt. Therefore, the selection of the topic — Modern Indian History — was determined by the standards rather than our children's own curiosity. The children were pitched into a project which was substantially academic yet gave an insight into a very emotionally charged period, suffused by love of the motherland.

There was assigned reading, lectures and discussions, as well as self-study. Initial consolidation activities took the form of summarisation for each chapter. While the children were not too enthusiastic about summarisation, we felt that it was essential, as it inculcated several higher order skills. Some of these: Reading and comprehending dense text, processing the information adequately, reducing it to its essence, writing in the long format, and preserving a sense of narrative continuity. The children selected two chronological periods — 16th century till 1857, and 1913 to 1950, further divided into periods. Each of them then researched and scripted their portion.

**Part 1 – 1700 to 1857**

1. European Traders – charter by William Pitt
2. Conquest of Bengal – battle of Palashi and Buxar
3. Doctrine of lapse and subsidiary alliance – KIM
4. Mysore wars and Tipu Sultan
5. Revolt of 1857 – ruthless killing and the end of the East India company
6. Indigo uprising – condition of the peasantry, development of industry
7. Early revolutionaries – Birsa Munda
8. Proclamation by Queen Victoria

**Part 2 - 1860 – 1947**

1. Formation of associations and the Indian association: Hume, Motilal Nehru, Balgangadhar Tilak
2. Partition of Bengal 1905; Bande Mataram; demonstration on banks of Ganga; Lord Curzon's folly and beginning of Swadeshi movement
3. Boycott of British goods; mill workers' strike in Bombay; Sri Aurobindo – trial in Calcutta; First World War; Morley Minto reform; Montague Chelmsford Act; duplicity of Indian princely states; demand for Home Rule
4. 1918 – Gandhiji; Jallianwala; non-cooperation; Gandhi-Ambedkar

dialogues about untouchable-Harijan status; round table conference failure; Gandhi Irwin pact; civil disobedience stopped; Khilafat – all leaders of Congress arrested

5. 1923 -1930 – Government of India act; Simon commission; Motilal Nehru report of moderate participation, extremist positions; Chittagong uprising; Salt march
6. 1935 – Effort of the British to create tension between Congress and Muslim league; 1935 Lucknow session; socialist Nehru and Khadi Gandhi; Second World War; Subhas Chandra Bose and Gandhi; Cripps mission; effort to divide India into small nations; famine of 1943
7. Cabinet mission and elections of Hindu, Muslim and Sikh; Congress effort to remain secular; Mountbatten and the partition
8. The constituent assembly is formed; Rajendra Prasad as the new President, Dr. Ambedkar as Minister of Law and SP Mookerjee of the Hindu Mahasabha as the Minister of Industry and Supply; Integration of princely states, role of Sardar Vallabhbhai Patel, the struggles thereof

**Dramatisation as Consolidation.**

Early in the project, we agreed that we needed a consolidation activity different from the usual charts and/or presentations.

Group Diya: *"One of the highlights of my own education was my history teacher in middle school, a maverick who was also the drama teacher. We were always encouraged to enact history, sometimes factual, sometimes imagined. This anecdotal approach was very effective in helping us absorb the essence of what happened, who the key players were, and what their motivations were."*

From left: Nehru - Gandhi - Sardar Patel





The context for Integrity group was that they had spent some of their happiest and most productive hours last year (as Felicity) in the creation of drama. The group of students had written and enacted two plays — Ali Baba, a shadow puppet show in Hindi; and Keeper, our dramatisation of an English book that we had studied as literature, about a football player. The children had enjoyed the process of adaptation. They had evolved the plot, by deciding which parts to include and which to leave out. They had identified the key characters who would move the story forward. They had written the dialogue and planned the action. Finally, they had enacted both for the school. This experience was very satisfying for all of us, and, as Diyas, we felt that dramatisation was an appropriate outcome for our history project too.

We initiated the drama phase well in time for our Independence Day celebration. Ideally, we should have completed our

historical studies before embarking on the playwriting. Practically, though, we were still grappling with many of our historical issues well into the dramatisation activity. The children did not stick to the facts, but invented situations that were consistent with the historical events. The Diyas were involved throughout, highlighting deviations from history, and making suggestions on narrative and dialogue. Such projects have a tendency to grow, in step with the group's growing experience, and this was no exception. We soon realised that the audience could not sit through such a long presentation. It was inevitable that the drama would have to be presented in two parts. Initially, we expected that it would be over two consecutive days. Our next realisation was that we were not going to finish in time for Independence Day, and would have to stage just the first part. The children proposed that Gandhi Jayanti would be an appropriate occasion for the second part. Moreover, it would give them enough time to prepare better.

#### March to Sabarmati





### Importance of self evaluation

On our Independence Day celebration, we presented a drama that covered the time from the dawn of the colonial period in India till the early revolutionaries. There was much learning from the presentation. To consolidate the audience feedback, the children spread out to all the groups that had attended and collected feedback. This was consolidated and reviewed by the entire group. The scripting process for Part 2 (1913-1950) began. The children proposed that this time we would have designated responsibilities for scripting, direction and music. However this turned out to be unproductive, so we reverted to scripting by all as before. On our part, Diyas had realised that the process was not as efficient as we had hoped for. Therefore, to expand the time resource, Literature classes were completely

allocated for scripting and drama practice. The children took their learning from the first performance into account for scripting as well as staging.

There were structural changes, some imposed by Diyas. The most significant was proscription of narrators. We had found that putting words into the mouth of a narrator is an easy way out for a playwright. However, it is pretty boring for an audience to have to listen to a static actor simply narrating something, and that too not a story. The children were at a bit of a loss on how to work without narration, but they did see the sense in this approach. The other idea was to have as many of the children on stage as possible, at all times. Not only did this keep unemployment and offstage distraction down, but it led to creative

Arrest of Gandhi - children from all groups joined the march



ways of allocating and using characters. Since actors were to be changing parts rapidly, it was decided that costumes would be minimal, such as headgear. The younger children in the audience, used to full costumes, would find it hard to keep track, but this was a risk that we would have to take. There was a minor change in the audience age profile, with the youngest group from our last performance dropping out. Guided by Diyas, the inevitable violence (Jallianwala Bagh, Chauri Chaura) was limited to suggestion and offstage sounds. Since we are a group of 8 people, the many protest scenes were not convincing. We inducted Harmony, the younger group, to be a part of the crowd scenes. They were, of course thrilled to be a part of it and joined in with just a day or two of practice. This added a lot of energy and

volume to the Satyagraha scenes, and made them more convincing, which, in turn, led to more audience involvement. We also included some singing this time. वैष्णव जन तो, कदम कदम बढ़ाये जा, and Faiz's poignant poem, सुबह-ए-आज़ादी all featured, as also the concluding वन्दे मातरम् ।

The performance went off rather well. To validate our instinctive assessment, we repeated the audience survey. The feedback was very discerning, even from the young ones. This time, the children also interviewed the Diyas who had viewed the performance. The findings confirmed our feeling that the performance was better, and there was plenty of feedback to incorporate for future performances.

Lord Curzon - Partition of Bengal 1905



## Looking back in reflection

*The reflective activity was not done immediately after the project conclusion. Since time had intervened, a guided set of pointers was distributed and some of the children preferred this to free reflection. Here they are, preceded by Diyas' reflections on each child's growth.*

### Peer Review

P\_\_ has a wonderful command over Hindi, and kept us on track during our writing phase. However, P\_\_ had struggled with confidence issues for some time. These sometimes manifested as a stutter, especially when reading aloud or performing on stage. His friends were initially protective of him and tried to give him fewer speaking lines. However, they as well as P\_\_ realised that he needed to overcome his barriers. During practice, whenever he got stuck on his speech, they would wait patiently till he got it out, then proceed normally. P\_\_ made good progress with this sensitive handling. During the performance for Part 1, there were a couple of what the audience saw as long pauses. However, by the time we got to Part 2, he took on more challenging parts and delivered his lines with less difficulty. By the time we went up for the performance, he had worked out his own solution, and did a fine job of delivering his lines, with hardly a hitch.

### Self Reflection

*When we started our history project I was excited about it. How the boring history was going to be transformed into an exciting play by US – the great Integrity group. We wrote the script happily and might have fixed some of factual errors in the script. Both plays went smooth and it was fun. Sometimes the practice was boring and we didn't put the best of effort. I really enjoyed the script writing part. When we were reviewing our play with Diyas and kids, they gave quite good advice which we can improve in our next play. I started the script writing with full enthusiasm. I wrote well and I think I did not have any problems writing. When the time for practice came, I got nervous. Would I be able to speak the K's, because I only face problems with that. (When I talk with my friends, I do not face any problems.) Soon the practice was over and on the final day I was really nervous. Soon I realized that I could change the word and not the meaning. I did that and faced less problems.*

P\_\_

### Peer Review

Z\_\_ had been a shy child, reluctant to speak openly, especially in public. Last year, he had discovered that his love for fooling around was a valued trait when it came to acting. During this project, he metamorphosed into a fine actor, composed and alert, with a wonderful

sense of timing. He was also able to make nuanced suggestions that went a long way in refining both script and performance.

The whole process of learning about the British rule in India started in our SST class with Kamala Didi.



## Self Reflection

*We started the project by reading and making notes from Our Pasts III- part 1 and part 2. We read the book chapter by chapter and summarised each.*

*Then we moved on to Manjitha Bose's History book. Over our summer holidays, we summarised some chapters from the book, mainly from Gandhiji's arrival to Independence.*

*After the holidays we discussed these chapters and understood them furthermore.*

*As our Independence Day was approaching, we had an idea to make a play about the history of our nation and how we gained independence.*

*Everyone was assigned two major events and we had to make the story of the event into a script. As the whole story was a little too long and the audience would have gotten bored, we decided to do only half of the story on Independence Day. We thought we would do the second half later.*

*There was lot of time wasting throughout the process of making it but we finally managed to complete the whole (part one) script.*

*We started to practise and act.*

*Characters were assigned and the end result was (in my thought) really good. There were only some minor mistakes and for that we asked the whole audience for feedback.*

*After almost a month of break (from plays) we continued to make our part-2 script, that we were going to present on Gandhi Jayanti.*

*Kamala Didi assigned us time periods on which we would work and present to the class. This would finally be the time period each of us would have to write a script on.*

*I was assigned 1941- 43. I wrote on the two major events during that time period, Quit India movement and Azad Hind Fauj. Writing on those two events was quite interesting and I learned a lot from the presentations that were done by my friends.*

*We were ready to start on the script. Our end product was better than the last one and on the final day the play went very well and everybody liked it.*

**MY LEARNINGS ABOUT THE SUBJECT:** *I learnt a lot during the whole process. My learning was not only about information it was also about teamwork, acting, and play/script writing.*

**PLAYWRITING:** *I loved making/writing the play script. Discussing the events with everyone and then writing it together was a great experience. The best part was trying to get all the pieces of the puzzle together. Even if it didn't happen during the writing, we would (with Sridhar Bhaiya) put them together while practising and acting.*

**PERFORMANCE:** *The whole Integrity class put together two stunning plays. Both of the performances were amazing by my opinion. We may have stumbled a little and forgot dialogues and scenes but overall it was a great play.*

*My performance had improved by doing plays the previous year and I was able to stay confident throughout. I improved furthermore after the first Independence Play and better in the second.*

**FRIENDS:** *The whole process was mainly about teamwork. I had some great moments and I had a lot of fun. The whole process created some great memories for everyone and I hope I will never forget them.*

Z.\_\_\_\_



## Peer Review

**P\_\_** has come a long way. A playful child, he had in the past shown little interest in putting in the hard work that goes into drama, and his mischievous disruptions were barely tolerated by the group. However, by the time we embarked on this project, his attitude had become more constructive. He was more amenable to taking direction, and made sure that his dialogue was delivered with clarity and audibility.

## Self Reflection

*The Process: The process was interesting because we learnt many things like more about acting, how give special effect without any special device like gadgets... and everything can be done with or without any help because if you have a team then anything is possible because every person come up with a different idea and some are very helpful.*

*My feelings: My feelings... were mixed, sometimes, I felt angry because people were not doing as instructed by Sridhar Bhaiya and when I told them, they found it funny and start to laugh. I felt happy and wanted to laugh because of some funny joke and felt good and pleasant.*

*My learning about the subject: I got to*

*know more about the History of India and how each major event was planned and what happened after, it was amazing. About play writing: Play writing was fun because one day S came to my home and we both wrote together because his part was after mine and he got to do a night stay and it was really fun. In school we were listening to music, working, and dancing, some times we fought over who would play a song but it got decided by doing odd-even.*

*Performance: The first performance was on 16 Aug 2018 and was good or average but overall it was fun, the second performance on Gandhi Jayanti was much better because we first surveyed the school and understood what had gone wrong and that's why the play was much smoother and better. Your friends: My friends were great supporters because they helped me improve my performance, and we joked sometimes so I felt happy around them. ME: I helped many people improve their overall performance and I improved myself too and I gave many new Ideas that helped in the writing of the script and the performance.*

*P.S: Overall I had a lot of fun and gained a lot of experience and discovered many new things about my friends and me!*

**P\_\_**

## Peer Review

**A\_\_** is the only girl in the group, and is taciturn by nature. While acting, she tapped into her inner strength and presented herself on stage with dignity and authority, as befitting her roles.

## Self Reflection

*The Indian history project was a really different experience for me, because I had never ever written a script before.*

*The process was also very interesting because we did multiple subjects in one project. Like, we did English literature and grammar, Hindi, history and theatre. This way of doing a project was also very effective, because I still remember most of the history we learnt. In this project I learnt multiple things, from my friends-(to)the subject itself. I learnt how to coordinate with my friends, how to give life to a dialogue,*

*how to express a feeling better and how to cover up the mistakes, but this was in only the theatre part. In English and Hindi, I learnt how to shorten a dialogue or a sentence without changing the actual meaning. In history I learnt all most everything I know about it now, like about all the freedom fighters, what movements they did and why the colonisation really took place. In this project there is a lot of learning, so I can't really point out all of it, but I got to know what we are good at in theatre. For example, I got to know that K and S are both good at writing dia-*

*logues and Z is a good actor, etc. I know about all this, but I am not so sure about myself. I learnt (about myself) that I can be a good script writer if I really try and that my coordination with everyone else is not bad but fine. After all I think we did a great job, because all most everyone in the school gave us good feedback and they were excited when they got to know that we were also doing a second part of the play. Therefore I think that the experience was great.*

A\_\_

## Peer Review

A\_\_ is good with words, able to articulate complex thoughts in precise language. However, prior to this play, he wrote in a somewhat terse and dispassionate style. The first stride that he made was in writing a wonderful historical summary. It was thorough, well organised, and flowed well. While scripting, he continued to develop his expression, coming up with fluent, well-structured dialogue. He still needs to work on unstiffening his body language, but he has great potential as a writer.

For our other S\_\_, English had been a distant second language, and, consequently, he lacked fluency. To add to this, he found himself playing a part that required him to spend long periods on stage and deliver many lines. He took on the challenge with courage and dedication, learning his lines and practising sincerely. On the day of the performance, his natural calm came to the fore, making his portrayal of Gandhi highly convincing, without resorting to the usual props such as round glasses.

S\_\_, while strong in his beliefs and insights, was reticent. Part of this came from having been teased by his classmates at various times in the past. His normal demeanour was conciliatory. However, he took on the parts of strong leaders and, to an extent, projected their strength through his physical stance and positioning. His capacity for complexity and depth came in handy during the adaptation stage, when historical events had to be distilled into dramatic presentation.

K\_\_ has always had a natural flair for language, be it English or Hindi (or Sanskrit). His contribution to the script was invaluable. With a finely tuned ear for the spoken word, his writing and editing helped make the lines flow well, in both languages. While his physical acting needs work, he still carries the day with his wonderful delivery, using his clear and strong voice to advantage. His natural cheer and ability to defuse conflict played an important part in keeping the group harmonised and focused.

### Aim of Life

... one is here (on earth) because there is something to be done and this something is not anything egoistic. This seems to me the most logical way of entering upon the path... to realise, "Since I am here, it means that I have a mission to fulfill. Since I have been endowed with a consciousness, it is that I have something to do with that consciousness — what is it?"

Generally, it seems to me that this is the first question one should put to oneself:  
"Why am I here?"

The Mother



## **The Mother's International School (MIS)**

The Mother's International School started its journey on 23 April 1956. It had humble beginnings and was anchored in a solid foundation of strong values. It is a senior secondary English medium school and is affiliated to the Central Board of Secondary Education (CBSE).

The Mother's International School is inspired by the philosophy of integral education as envisaged by Sri Aurobindo and the Mother. Sri Aurobindo has assured us that the mind is not the end and the summit of evolution. There are ranges and vistas as yet unexplored or insufficiently explored by man. Man's aspiration and preparedness could hasten the evolutionary process. A system of education should therefore aim at producing men and women who are whole, not fragmented, who are not motivated by self-seeking ambition but who have wide sympathies and immense goodwill. A well trained and disciplined body is the material base and, therefore, the need for a carefully selected program of sports and physical exercises. Education of the senses would involve the cultivation discrimination and aesthetic sensitivity so that the child chooses what is beautiful, noble and harmonious, and rejects what is crude, vulgar and harmful. The mind has similarly to develop the power of observation, concentration, wideness, thought control and silence, the last one being very important to receive inspiration and 'open new horizons to man's capacity'.

This guiding philosophy has helped the school in framing a rich curriculum. From its inspiration, the school has focused on developing the different parts of the being. The school day begins with the morning assembly, which is unique to the ethos of the school. This is also a time for reflection and the few minutes of silent concentration go a long way in energizing one to face the challenges of the day. Believing that each child has her/his unique potential, has always offered a wide array of activities to help student find fulfillment. In recent years, different clubs have been instituted to promote a stimulating environment for students. These clubs are forums which help students to explore avenues of learning beyond the narrow confines of the class room through cooperation and collaboration. Apart from academic excellence, the students of this institution have won many laurels in sports, art, music, dance, debates and declamations.

The institution benefits from the serene Ashram ambience and the mutual interaction between the Ashram and the school thus creating the right environment to groom young minds.





*Every child is a lover of interesting narrative, a hero worshiper and a patriot. Appeal to these qualities in him and through them let him master without knowing it the living and human parts of his nation's history.*

*Every child is an enquirer, an investigator, analyser, a merciless anatomist. Appeal to those qualities in him and let him acquire without knowing it the right temper and the necessary fundamental knowledge of the scientist.*

*Every child has an insatiable curiosity and turn for metaphysical enquiry. Use it to draw him on slowly to an understanding of the world and himself.*

*Every child has the gift of imitation and a touch of imaginative power. Use it to give him the groundwork of the faculty of the artist.*

Sri Aurobindo  
CWSA, Vol. 1, p. 395

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